



Quarterly
Review of

INTERNAL MEDICINE
AND DERMATOLOGY

Paul W. Clough, M.D.
editor-in-chief

VOLUME 8 NO. 2

JUNE 1951



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OF INTERNAL MEDICINE AND DERMATOLOGY

FOREWORD

The QUARTERLY REVIEW OF INTERNAL MEDICINE AND DERMATOLOGY provides a systematic and selective system for bringing together, in one publication, a quarterly summation of the clinical and experimental developments in internal medicine and the related medical specialties on a world-wide basis. During the past several years, eminent teachers and clinicians have given much thought and effort as to the best bases for selection and the most practical methods for classifying these data for quick clinical reference and easy collateral reading. Through this cooperative effort there has been developed in the QUARTERLY REVIEW an assured system for definitely keeping abreast of the currently approved new therapeutic procedures and opinions based upon the consensus of internationally recognized authorities. This plan not only saves time and expense but also through the annual cumulative index builds, for each subscriber, a permanent reference work unsurpassed for scope and authority. Emphasis is placed upon the clinical application of the newer therapeutic agents and procedures; therefore, specific dosages are given, reactions and contraindications are discussed, and all other essential data are presented so that these newer methods may be promptly, safely, and successfully applied by all who refer to the QUARTERLY REVIEW. For quick reference and to facilitate the uses of these data for collateral reading the following classifications are employed:

MEDICINE

Infectious Diseases	Gastrointestinal Disorders and Diseases
Chemotherapy of Infectious Diseases	Blood and Lymphatic Disorders and Diseases
Diseases Caused by Animal Parasites	Allergic Disorders and Diseases
Respiratory Disorders and Diseases	Deficiency Diseases and Metabolic Disorders
Cardiovascular Disorders and Diseases	Nervous and Muscular Disorders and Diseases
Genitourinary Disorders and Diseases	Miscellaneous

DERMATOLOGY

BOOK REVIEWS

SYPHILOLOGY

NEWS, NOTES, AND COMMENTS

A section entitled International Record of Internal Medicine and Dermatology is to be included at the beginning of the journal. This Record Section will consist of advanced experimental and clinical reports.

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INTERNAL MEDICINE AND DERMATOLOGY

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Incorporating the International Record of Internal Medicine and Dermatology

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internal medicine

INFECTIOUS DISEASES

Case of Weil's Disease Observed on the Author's Own Person. R. ORLINSKI. Polish Medical Weekly 5:Nr35/36, 1950.

The author describes a typical picture of Weil's disease. In the case discussed there were considerable initial difficulties in obtaining the positive results of the laboratory investigations.

The infection was incurred (during a bath in the lake) 10 days before the beginning of the disease, probably by means of the digestive tract. The diagnosis established upon the objective examinations always should be confirmed by the bacteriologic and serologic investigations. Nevertheless, if there is only a suspicion for Weil's disease, penicillin should be applied immediately in large doses and for a long period of time. Although penicillin already was applied in the discussed case in the second return of the fever (thirty-fifth day of the disease), the obtained results of treatment with that antibiotic have been, however, the same as the therapeutic results of Bulmer, Hart, Cross, and Kopylow. The decrease in body temperature took place 36 hours after beginning of penicillin treatment, while the patient's own feeling has immediately improved. The visual disorders and the degree of the intensity of the jaundice remained the same. In spite of several examinations of the urine, the more serious kidney complications, so often reported by various authors, have not been ascertained in the discussed case. The course of the disease was serious, however, having all the signs of infectious disease—the falling out of the hair, disorders of the acuity of the eyesight, bleedings, rapid loss of the weight, etc.

The laboratory failure acknowledges Szymanski's opinion that "the finding of the spirochetes in the immediate preparations and their cultivation are very difficult and even in the undoubtful cases they are often negative."—*Author's abstract.*

Streptococcic Viridans Meningitis: A Review of the Literature and Report of Nine Recoveries. A. HOYNE, AND H. HERZON, Chicago, Ill. Ann. Int. Med. 33:879-902, Oct. 1950.

It is indicated by the authors that this is probably the first complete review published on *Streptococcus viridans* meningitis. Apparently, only 9 recoveries from this type of meningitis were reported prior to 1937 when the sulfonamides became available. Moreover, since 1937, there seem to have been but 25 additional recoveries. Consequently, including the 9 cases cited in this paper, it appears that only 34 patients have survived attacks of *Streptococcus viridans* meningitis. It is an established fact that *Streptococcus viridans* is an infrequent invader of the meninges and that recovery from this kind of meningitis is rare. However, there is little true statistical reporting because a bacterial diagnosis frequently consists of merely stating the organism as a *Streptococcus* without further classification. *Streptococcus viridans* as the etiologic factor generally occurs in from 0.3 per cent to 2.4 per cent of all types of purulent meningitis. However, in recent years at Cook County Contagious Hospital there has been an increase in the percentage of *Streptococcus viridans* meningitis as related to total streptococcal meningitis from 14 to 67 per cent. In only 13 per cent of 55 cases of viridans meningitis was this condition secondary to subacute bacterial endocarditis. Among the 9 recoveries now reported the ages ranged from 5 months to 45 years. All patients were treated with a sulfonamide, and sulfathiazole was the drug of choice for seven. Penicillin was also administered to 6 patients. Only 3 of those who recovered received any intrathecal therapy. 71 references. 5 tables.—*Author's abstract.*

Modern Trends in Meningitis. JOHN M. HIGGINS, Sayre, Pa. Guthrie Clin. Bull. 20:145-48, Jan. 1951.

Meningitis has a much better prognosis than was true two decades ago. This is especially true in the bacterial types, although only in a very limited degree in tubercular meningitis.

Satisfactory treatment is dependent on early diagnosis and correct therapy. Early diagnosis is aided by a high degree of suspicion. A routine blood culture taken early in all infections of undetermined origin is a good policy—also, a spinal puncture if suspicion of central nervous system involvement exists. As therapy is dependent on correct diagnosis, close cooperation with a competent bacteriologist is essential. Treatment involves careful consideration of fluid and electrolyte balance, and then, the selection of the particular agent which should most successfully counteract the organism responsible.

Sulfadiazine and penicillin are at present the principal agents in meningococcal and pneumococcal meningitis. Initial doses especially should be large. In some instances, penicillin in doses of 100,000 to 1,000,000 units every two or three hours is advisable. In influenzal meningitis, streptomycin and sulfadiazine have been successful. Recently chloramphenicol has proved a valuable adjunct. It may well be that aureomycin, chloramphenicol, and terramycin will prove to be generally useful in the above named infections.

Just now, the general trend is against intrathecal administration of drugs. Very recently, cortisone has appeared to be of value in cases where adrenal damage was suspected.

A few cases of tubercular meningitis are reported as responding favorably to streptomycin or streptomycin combined with promizole.—*Author's abstract.*

Isolation of Coxsackie Virus from a Patient with Suspected Poliomyelitis. SHERMAN

A. MINTON, JR., Indianapolis, Ind. Quart. Bull. Indiana Univ. M. Center 13:3-6, Jan. 1951.

A virus pathogenic for suckling mice was recovered from 1 of 11 children with a clinical diagnosis of poliomyelitis. A histopathologic examination of infected animals suggested a Group A coxsackie virus. The virus was isolated from antibiotic-treated fecal suspensions obtained on the second and thirty-sixth hospital days and was neutralized by the patient's convalescent serum. The clinical course was typical of paralytic poliomyelitis, and it is assumed that there was simultaneous infection with coxsackie and poliomyelitis virus. 19 references.—*Author's abstract.*

A Survey of Human Brucellosis in Queensland. E. H. DERRICK, AND H. E. BROWN, Brisbane, Australia. M. J. Australia 2:709-15, Nov. 11, 1950.

Twenty-five cases of brucellosis, occurring in Queensland over a period of 14 years, are reported. Twenty-three patients were male, 2 female. Diagnosis was made by the agglutination test, confirmed in 1 case by the isolation of a strain of *Brucella*, probably *Brucella suis*. Fourteen of the patients—6 meat workers, 2 meat inspectors, 5 dairy farmers, 1 veterinary officer—were associated occupationally with cattle or pigs or both. Such association offers a much higher risk of brucellar infection in Queensland than the ingestion of milk.

The general opinion that *Brucella melitensis* is not present in Australia is supported by the absence of brucellosis among goat herds or drinkers of goat's milk in Queensland. Strict surveillance by the quarantine department of the importation of goats and sheep must be maintained to prevent its entry.

Brucella suis was the probable infecting agent in at least 3 of our cases. The role of *Brucella suis* in human brucellosis in Queensland needs further investigation, as this species is common in Queensland pigs and is credited with greater invasiveness for man than *Brucella abortus*.

To clarify the epidemiology, it is desirable that endeavors be continued to isolate and identify the species of *Brucella* responsible for human infections. There is a correlated need for further study and effort to improve the standards of diagnosis which presents difficulties to both clinician and pathologist. A practical step towards this end would be to make available to practitioners a rubber-capped bottle containing suitable medium which could be inoculated at the bedside.

The main symptoms in our cases were pyrexia, sweats and shivers, malaise, headache, loss of weight, generalized pains, and anorexia. The illness might be short or prolonged for many months. Infection might be latent. Two patients were treated

with chloromycetin with good results. 17 references. 3 figures. 4 tables.—*Author's abstract.*

"Q" Fever in South Australia. I. Isolation of Causative Organism from Four Cases and Its Identification as Rickettsia Burneti. J. STOKES, Adelaide, Australia. M. J. Australia 2:745-50, Nov. 18, 1950.

Q fever was recognized clinically among abattoir workers for the first time in South Australia in the summers of 1947 and 1948. The organism, *Rickettsia burneti*, was isolated from 2 hospital patients and later from 2 laboratory cases by inoculation of mice and guinea pigs intraperitoneally with patients' blood, followed by subinoculation of ground-up spleen and liver tissue from these animals into the yolk sac of 7 day old developing chick embryos. Ether-extracted antigens were prepared from the two earlier strains and their identity established by checker board complement fixation titrations against hyperimmune sera, prepared in guinea pigs inoculated with suspensions of the two local strains and the Henzlerling strain. Close immunologic relationship between the three strains was thus established. 27 references. 2 tables.—*Author's abstract.*

Studies on Tubercular Precipitin Reaction. IV. Precipitin Production in the Guinea Pig. YUKIKO HADA, AND SUSUMU MOMOI. Ann. Tuberc. 1:123-27, Dec. 1950.

Guinea pigs, which were inoculated subcutaneously with varied doses of living human, bovine, and avian tubercle bacilli each, were tested for precipitin concentration reacting with the smashed extract of corresponding tubercle bacillus.

Precipitin after the human type of the infection was proved as early as on the third day of infection, reaching the maximum intensity within one to four weeks, and decreasing steeply afterwards. After the avian infection, precipitin was first noticed at the beginning of the second week after the infection and increased slowly, reaching the maximum response from five to eight weeks after the infection, followed by regression. After the bovine infection, precipitin was first noticed on the seventh day after the infection. It increased for the next two to three weeks, decreasing afterwards.

Precipitin was demonstrated in all instances before skin allergy was developed toward homologous tuberculin. The intensity of the antibody response had no definite correlation with the size of bacilli inoculated.

CHEMOTHERAPY OF INFECTIOUS DISEASES

Effects of Adrenocorticotropic Hormone in Pneumonia: Clinical, Bacteriological and Serological Studies. E. H. KASS, S. INGBAR, AND MAXWELL FINLAND, Boston, Mass. Ann. Int. Med. 33:1081-98, Nov. 1950.

Three patients with pneumonia due to types 8, 2, and 1 pneumococci, respectively, and 2 with primary atypical pneumonia were treated with pituitary adrenocorticotropic hormone. Defervescence and relief from symptoms and signs of toxemia occurred promptly in all cases. In 3 instances the patients remained asymptomatic and afebrile, despite the persistence of bacteremia in one and the continued production of rusty sputum in another.

One patient with pneumococcal pneumonia experienced an exacerbation of symptoms while receiving ACTH, with remission when the dose was increased. This patient had an extension of his pulmonary lesion and later developed empyema. One patient with viral pneumonia had a similar exacerbation of symptoms while receiving the hormone, with prompt relief from all symptoms except cough when the dose of ACTH was increased but with return of fever and malaise after ACTH was withdrawn. No evidence was obtained of any bactericidal action exerted by adrenal steroids. Anti-pneumococcal antibodies and cold agglutinins appeared at the anticipated time, with no evidence of acceleration or delay in their production.

Eosinophiles were uniformly absent in all cases during the acute stages of the illness and returned either after the dose of ACTH was reduced or, as in one case, when the patient developed tolerance to the administered dose of the hormone and escaped from its effects. Clearing of the pulmonary lesions may have been accelerated in one patient and delayed in another, but in the remaining 3 patients resolution of the pneumonic process seemed to have been neither accelerated nor delayed.

All the patients manifested euphoria and a sense of well-being at some time while they were receiving the drug. Two developed glycosuria, 2 developed facial edema, and all demonstrated some degree of bradycardia, but none showed any significant alterations of blood pressure or sedimentation rate attributable to the ACTH.

It is concluded that, in some instances, ACTH may induce profound changes in the clinical symptoms of patients with acute infections without demonstrably affecting the etiologic agent. There was no evidence from these cases of any effect on the production of specific antibodies. The significance of these findings is not clear. They suggest that the greater production of adrenal steroids may augment those metabolic processes which are active in the cellular responses to infection. 10 references. 5 figures. 3 tables.—*Author's abstract.*

Carrion's Disease Treated with Chloromycetin. EUGENE H. PAYNE, Detroit, Mich., AND OSCAR URTEAGA, Lima, Peru. *Antibiotics and Chemotherapy* 1:92-99, April 1951.

Six adult patients suffering with the anemia febrile phase of Carrion's disease were treated with chloromycetin. These patients were all in grave condition with a red blood count of two million or less, and the majority of the red cells parasitized with *Bartonella bacilliformis*. Chloromycetin produced a rapid change in the clinical picture; within 24 hours the bacillary form of the *Bartonella* had changed to the coccoid form and improvement could be noticed early, both in the general condition of the patient and the hematologic picture. All patients made a rapid and uneventful recovery with the exception of one relapse due to insufficient treatment. This patient was treated with the second course of chloromycetin, and a complete recovery followed. No secondary *Salmonella* infections appeared in this series of patients. Since secondary *Salmonella* infections cause a high percentage of the mortality in this stage of Carrion's disease, it is suggested that, knowing the effectiveness of chloromycetin against the *Salmonella*, this antibiotic may prove to be the drug of choice in treating this dreaded disease of the Peruvian "quebradas." 42 references. 7 figures.—*Author's abstract.*

Treatment of Typhoid Fever. I. Combined Therapy with Cortisone and Chloramphenicol. JOSEPH E. SMADEL, Washington, D. C. Ann. Int. Med. 34:1-9, Jan. 1951.

Chloramphenicol, which now has an established place in the treatment of typhoid fever, elicits little clinical improvement within the first 36 hours of therapy, and patients do not become afebrile until the third or fourth day. Since bacteremia subsides promptly, the continuing clinical manifestations probably represent host response to products of bacterial and tissue destruction. Cortisone was employed in combination with chloramphenicol in 8 Malayan patients with typhoid fever.

Combined therapy with cortisone and chloramphenicol provided more prompt relief from the clinical manifestations of typhoid fever than did treatment with chloramphenicol alone. Typhoid patients who, in addition to chloramphenicol, received 200 mg. of cortisone the first day and 100 mg. for several days thereafter had an average febrile period of 50.2 hours. Those who received 300 mg. of cortisone the first day, followed by decreasing amounts for the next two days, along with chloramphenicol, were febrile for an average of 15.5 hours. Chloramphenicol was administered to all 8 patients in 1.5 Gm. oral doses twice daily for four to five days, then once daily for 10 additional days. The combined therapy appears to be of sufficient theoretic and practical interest to warrant further study. Complications such as hemorrhage, perforation and relapse may still be expected in early convalescence. Two of the present patients relapsed despite the two week course of chloramphenicol, and 1 continued to bleed for several days after he became afebrile. 15 references, 2 figures, 1 table.—*Author's abstract.*

Viomycin in Tuberculosis of Guinea Pigs Due to Streptomycin-Sensitive and to Streptomycin-Resistant Tubercle Bacilli. ALFRED G. KARLSON, Rochester, Minn. Proc. Staff Meet., Mayo Clin. 26:53-59, Jan. 31, 1951.

Two experiments on 36 guinea pigs each were done simultaneously. In the first, the animals were infected with a streptomycin-sensitive strain of tubercle bacillus, and in the other a streptomycin-resistant strain was used. Twenty-four days after infection 6 animals from each experiment were killed and found to have grossly visible lesions of tuberculosis in the usual organs of predilection. The remaining animals in each experiment were then divided into three groups of 10 animals, each group to be used, respectively, as (1) the untreated controls, (2) a group treated with streptomycin, 6 mg. once daily per animal, and (3) a group treated with viomycin, 20 mg. once daily per animal. Treatment was started on the twenty-fourth day of infection and continued for 61 days, at the end of which time all the surviving animals were killed.

In both experiments the animals treated with viomycin had little gross or microscopic evidence of active tuberculous disease—a result which was in contrast to the extensive destructive lesions seen in the untreated animals. In the group infected with streptomycin-sensitive tubercle bacilli the effect of administering viomycin was comparable to that produced by the treatment with streptomycin. The streptomycin-sensitive infection and the streptomycin-resistant infection appeared to be benefited by the administration of viomycin. 12 references, 3 figures.—*Author's abstract.*

The Chemotherapy of Tuberculosis. ROBERT G. BLOCH, AND KIRSTEN VENNESLAND, Chicago, Ill. *M. Clin. North America* 35:153-67, Jan. 1951.

In appraising the clinical effects of streptomycin as well as other chemotherapeutic agents or combinations of agents, the various manifestations of tuberculosis can be divided conveniently into those of hematogenous or lymphogenous origin and those resulting from intracanalicular distribution. Impressive results have been obtained in hematogenous disease, especially in the previously universally fatal generalized miliary type of tuberculosis. When meningitis is also a feature of the disease, results are much poorer. In disease resulting from intracanalicular distribution lesions of the larynx and bronchi seem to respond readily, and good results also are reported in tuberculous enteritis. Streptomycin, as well as all other chemotherapeutic agents, is effective only against the comparatively new, exudative pulmonary lesion, while it has little or no influence on the old walled-off fibrotic process.

For the best results, chemotherapy must be fitted carefully into a long-range over-all therapeutic plan in which judicious use of time-honored methods of bed rest and surgical collapse play an important role. The development of drug resistance is the greatest stumbling block in achieving the ultimate goal of chemotherapy. The development of streptomycin resistance is related intimately to the genetic processes of the tubercle bacillus and occurs at a relatively rapid rate. Toxic manifestations of streptomycin therapy have been controlled to a great extent by proper dosage. Para-aminosalicylic acid, used alone, is much less effective against tuberculosis than is streptomycin. Because of a synergistic effect, however, it is highly valuable when used together with streptomycin, indications for combined therapy being essentially the same as for chemotherapy in general. There are indications that such combined treatment will at least delay the emergence of drug-resistant organisms. The thiosemicarbozones are discussed briefly. 20 references. 1 figure.—*Author's abstract.*

The In Vitro Sensitivity to Eight Antibiotics of Streptococci and Staphylococci Recovered from Cases of Bacterial Endocarditis. MORTON HAMBURGER, Cincinnati, Ohio. *J. Lab. & Clin. Med.* 37:60-63, Jan. 1951.

The *in vitro* sensitivity to penicillin, streptomycin, aureomycin, chloramphenicol, terramycin, neomycin, bacitracin, and polymyxin of 16 strains of *Streptococci* or *Staphylococci* from cases of bacterial endocarditis was measured. Eleven strains of *Str. viridans* not belonging to Group D were highly susceptible to the action of penicillin. Aureomycin, terramycin, bacitracin, and streptomycin were slightly less effective. There was considerable strain variation in susceptibility to streptomycin and neomycin. Chloramphenicol was less effective, and polymyxin entirely ineffectual. Two strains of Group D *Streptococci* proved resistant to penicillin, aureomycin, terramycin, chloramphenicol, neomycin, and polymyxin. They were fairly sensitive to bacitracin and streptomycin. Three strains of *Staph. aureus* were susceptible to streptomycin, aureomycin, terramycin, and bacitracin. They were resistant to chloramphenicol and polymyxin. There were strain differences in reaction to penicillin and neomycin. 7 references. 1 table.—*Author's abstract.*

Streptomycin-Resistant Coliform Bacilli in Stools of Tuberculous Patients Treated with Intramuscular Streptomycin. MORTON HAMBURGER, Cincinnati, Ohio, J. Lab. & Clin. Med. 37:64-72, Jan. 1951.

A study has been made of the streptomycin resistance of coliform bacilli in the stools of patients treated with streptomycin for various clinical types of tuberculosis. Streptomycin-resistant variants were found in only 1 of 93 stool specimens from patients not receiving streptomycin. The resistant variants were present in very small numbers in this specimen. Resistant coliforms appeared during treatment in the stools of 62.9 per cent of patients with miliary tuberculosis and/or tuberculous meningitis, 62.5 per cent of patients with tuberculous peritonitis, but only 8.6 per cent of patients with nonmiliary pulmonary tuberculosis. This difference is statistically significant.

Resistant variants appeared by the end of the second week of treatment in 40 per cent of the cases in which they were discovered and in 80 per cent by the end of the sixth week. The appearance of resistant variants could not be correlated with dosage of streptomycin or with the concentration of the antibiotic in the stool. In most instances the serologic type of the resistant strain recovered from any given patient differed from that of the sensitive strain recovered from the same patient. In a few instances the sensitive and resistant variants were serologically alike. Resistant variants of type 02 were found as commensals in the stools of 2 patients with tuberculosis. The same type also was encountered as a pathogen in a urinary tract infection and in a patient with *Esch. coli* septicemia. 7 references. 5 tables.—*Author's abstract.*

*Failure of Streptomycin to Enhance the Infectivity of *Histoplasma capsulatum* in Mice.* CHARLOTTE C. CAMPBELL AND SAMUEL SASLAW, Washington, D. C. Pub. Health Rep. 66:16-19, Jan. 1951.

Earlier reports by the authors described the growth enhancement of *Histoplasma capsulatum* in synthetic medium containing varying concentrations of streptomycin. Considering this, and the fact that histoplasmosis and pulmonary tuberculosis (for which the drug is used frequently as a therapeutic agent) are quite similar in clinical appearance, the authors undertook the investigation of *in vivo* effects of the drug.

Groups of white Swiss mice were infected with 3.5 million *H. capsulatum* yeast-phase organisms and treated with streptomycin. Absolute amounts of the drug varying from 0.05 to 5.0 mg. in 0.5 ml. distilled water were administered by the intraperitoneal route. The drug did not accelerate the death rate of experimentally infected mice when (1) it was given immediately following infection and daily thereafter for a period of 30 days; (2) a single injection of 2.5 mg. was given immediately following infection; (3) one-tenth the original inoculum, which had not previously produced mortality in excess of 50 per cent in untreated animals, was used.

The authors concluded that while streptomycin may enhance the growth of the mycelial phase of the organism *in vitro*, no increased virulence was observed with *in vivo* studies employing the yeast phase of the fungus. 3 references. 2 tables.—*Author's abstract.*

Relative Absorption of Salts of Streptomycin and Dihydrostreptomycin After Oral Administration. A. O. EDISON, S. KUNA, AND F. T. CUCHE, with the technical assistance of J. T. HANNON, Rahway, N. J. *Antibiotics and Chemotherapy* 1:49-53, April 1951.

Streptomycin calcium chloride complex (SC), streptomycin sulfate (SS), dihydrostreptomycin hydrochloride (DHCl), and dihydrostreptomycin sulfate (DHS), administered orally, were compared for acute oral toxicity in mice, vestibular dysfunction and drug concentration in the blood of cats, and absorption from the gastrointestinal tract of rats as reflected in drug concentration in the blood. Gastric irritation was also compared in the rats. The concentration of the drug in the blood two to three hours after massive oral doses (2 Gm./Kg. in cats) approximated that found after parenteral administration of about one-twentieth the oral dose. Neurotoxic signs (vestibular dysfunction) were produced in cats during chronic administration of large oral doses. In each case the chlorides were absorbed more readily than the sulfates and produced higher concentrations in the blood and greater gastric irritation. Toxicity decreased in the following order: SC, DHCl, SS, DHS. The streptomycin salts produced greater gastric irritation than the dihydrostreptomycin salts. Dihydrostreptomycin sulfate was found to be the least toxic and least irritating of the drugs thus tested. 8 references. 2 figures. 2 tables.—*Author's abstract.*

The Chemical Determination of Chloramphenicol in Biological Materials. JOSEPH LEVINE, AND HENRY FISCHBACH, Washington, D. C. *Antibiotics and Chemotherapy* 1:59-62, April 1951.

A simple chemical method is presented for the quantitative determination of chloramphenicol in biologic fluids. Sodium hydrosulfite readily and conveniently reduces the aromatic nitro group of chloramphenicol to the amine, which is assayed colorimetrically after subsequent diazotization and coupling with N- (1-naphthyl) ethylene diamine. 3 references. 1 figure. 3 tables.—*Author's abstract.*

Antacids and Aureomycin. R. GREENSPAN, Chicago, Ill. *Am. J. Digest. Dis.* 18:35-37, Jan. 1951.

In the clinical use of aureomycin side reactions consisting of epigastric distress, nausea, vomiting, and diarrhea are not uncommon and, although usually minor in nature, they may become severe enough to interfere with, or even interrupt, treatment with the drug. A preparation of aluminum hydroxide gel has been prescribed along with the antibiotic, a procedure often effective in controlling gastro-intestinal upsets. However, aluminum hydroxide gel (amphojel) significantly reduces the level of aureomycin in the serum when administered together with the aureomycin.

We have been interested in a new antacid, sodium carboxymethylcellulose (carmethose). It was advisable to determine whether or not this antacid affected the blood level of aureomycin, either by inactivation or by interference with absorption. Thirty ml. of aluminum hydroxide gel, administered 15 minutes before a single oral dose of aureomycin, markedly depressed the serum aureomycin levels in 10 subjects. The

simultaneous use of these two drugs is contraindicated. Thirty ml. of carmethose given in the same manner had no demonstrable effect on the aureomycin level of the serum and effectively diminished the gastro-intestinal disturbances frequently occurring with aureomycin therapy.

Amphojel absorbs aureomycin *in vitro*. It does not destroy or inactivate the latter, but it seems to hold it firmly, not permitting intestinal absorption. Carmethose does not absorb aureomycin *in vitro* and does not interfere with intestinal absorption. 10 references. 1 figure. 2 tables.—*Author's abstract.*

Fumagillin, an Antibiotic from *Aspergillus Fumigatus* H-3. T. E. EBLE, AND F. R. HANSON, Kalamazoo, Michigan. *Antibiotics and Chemotherapy* 1:54-58, April 1951.

Fumagillin, a new crystalline antibiotic, having anti-*S. aureus* phage activity, is reported. It was isolated from fermentations of *Aspergillus fumigatus* H-3. It is a monobasic acid; M.P. 189-194 C.; $\alpha_D^{25} = -26.6$; Molecular Weight approximately 450. A tentative empirical formula, $C_{27}H_{34}O_7$, is proposed. It absorbs in the ultraviolet with maxima at 239, 336, and 351 $\mu\mu$. A characteristic infrared absorption spectra is given. The preparation of the methyl ester (M.P. 145-147 C.), octabromide (M.P. 118-122 C.), di-(2,4-dinitrophenyl-hydrazone) (M.P. 123-126 C.) and potassium salt is reported. None of these have retained anti-*S. aureus* phage activity. 12 references. 2 figures.—*Author's abstract.*

A Pressing Problem: Penicillin-Resistant *Staphylococci* (Un problème d'actualité les staphylocoques pénicillinorésistants). ANDREU, ENJALBERT, MONNIER, QUERCY, AND DESUSCLADE, Institute de Bacteriologie, Toulouse, France. *Toulouse méd.* 51:643-49, Nov. 1950.

When penicillin was first used, it was found to be effective against *Staphylococci* infection of various types. Recently, as penicillin has been more and more widely employed in therapeutics, a number of observers have reported an increasing number of penicillin-resistant strains of *Staphylococci*. Studies of penicillin-resistant strains at the Toulouse Institute have indicated that penicillin therapy in staphylococcal infections does not result in the development of penicillin resistance in a strain originally sensitive to the antibiotic. Therefore, the increase in penicillin-resistant strains of *Staphylococci* must be attributed to the relative increase in the number of naturally resistant strains, as the naturally sensitive strains are being diminished by penicillin therapy. The penicillin-resistant strains are also definitely virulent strains, and thus their increase raises a definite problem in the treatment of infections of this type. In one surgical service there was "a veritable epidemic" of staphylococcal wound infection in surgical patients due to a strain of *Staphylococcus* that was resistant to penicillin. In order to stop further spread of this infection, it was necessary to close the service entirely, disinfect the premises, and treat those members of the staff who were found to be nasopharyngeal carriers of this strain. This suggested the importance of healthy carriers of penicillin-resistant strains of *Staphylococci* in the spread of such infections. In an obstetric service, bacteriologic study was made of the vaginal

secretions and nasopharynx of healthy pregnant women. As these patients showed no symptoms of infection they had not been treated with penicillin. Yet, of 186 strains of *Staphylococci* isolated, 58 or 31.3 per cent were resistant to penicillin; 75 of these strains were coagulase-positive, therefore pathogenic; and of these, 41 strains or 53.3 per cent were penicillin-resistant. Of 92 strains isolated from the vaginal secretion, 26 per cent were penicillin-resistant, and of 69 strains from the nasopharynx of the same patients, 28 per cent were penicillin-resistant. Of 26 strains of *Staphylococci* isolated from hospital personnel, 61 per cent were resistant. This definitely indicates the danger of healthy carriers of penicillin-resistant strains in spread of infection.

In cases of staphylococcal infection, the sensitivity of the infecting organism to penicillin must be determined in the laboratory; the sensitivity to other antibiotics also should be determined. If the strain isolated is sensitive to penicillin, this antibiotic should be employed in treatment. If the infecting organism is resistant to penicillin, one of the other antibiotics should be employed, preferably aureomycin. Streptomycin may be used, but only when laboratory facilities are available to determine whether or not streptomycin-resistance develops during therapy. Further research may develop some even more effective and less toxic antibiotic for the treatment of staphylococcal infections.

Rhodomycin—an Antibiotic Produced by a Red-Pigmented Mutant of Streptomyces griseus. GERALD SHOCKMAN, AND SELMAN A. WAKSMAN, New Brunswick, N. J. *Antibiotics and Chemotherapy* 1:68-75, April 1951.

A new antibiotic designated as *rhodomycin* is described in this article. It is produced by a pigmented mutant of *Streptomyces griseus*, the organism that forms streptomycin. *Rhodomycin* is red in acid and blue in alkaline solutions. It differs from similar antibiotic pigments produced by other species of *Streptomyces*. *Rhodomycin* is largely active against gram-positive bacteria and has little activity against gram-negative bacteria and fungi. It is not active *in vivo*. After this paper had been written, it was discovered that the name *rhodomycin* was used in Germany for another antibiotic. In the future it is proposed to change the name of *rhodomycin*, the antibiotic of the *S. griseus* pigmented mutant, to *rhodomycetin*.—Author's abstract.

A Review of the Therapeutic Application of Antihistaminics. GEORGE E. FARRAR, JR., Philadelphia, Pa. *Pennsylvania M. J.* 54:31-34, Jan. 1951.

An antihistaminic substance is capable of diminishing or preventing several of the pharmacologic effects of histamine. These compounds also possess atropine-like (or perhaps hyoscine-like) and dibenamine-like actions. They exert a depressing action on muscle, resembling that of quinidine and quinine. They are also local anesthetics and inhibit the spreading action of hyaluronidase. These drugs depress the reaction of many tissues to many stimuli.

Most of these substances possess the general formula (R-X-C-C-N) in which R indicates a variety of benzene or heterocyclic structures containing carbon and hydrogen and often nitrogen, sulfur and oxygen; X may be nitrogen, oxygen, or carbon.

When X is nitrogen, the familiar example is tripelennamine hydrochloride U.S.P. (pyribenzamine hydrochloride, Ciba). When X is oxygen, the familiar example is diphenhydramine hydrochloride U.S.P. (benadryl hydrochloride, Parke, Davis). When X is carbon, the familiar drug is prophenpyridamine N.N.R. (trimeton, Schering). Some patients respond to members of one of these groups better than to others. If a given drug fails or causes untoward side effects, substitution of a compound belonging to another chemical group is indicated.

Sneezing, nasal discharge, and itching are relieved in about 75 per cent of cases of seasonal hay fever, but the nasal obstruction usually persists. However, specific sensitivity should be determined and the appropriate hyposensitization regimen carried out because the antihistaminic agents control only the symptoms. The therapeutic results in nonseasonal or vasomotor rhinitis are similar but less striking, particularly where chronic paranasal sinus infection or psychosomatic factors are important in the etiology. In bronchial asthma not more than 20 to 40 per cent of patients are benefited by oral administration, and there is more improvement in cough than in wheezing. Except in mild cases or some childhood cases, the antihistaminic compounds are actually contraindicated because of the atropine-like drying action on the bronchial secretion. A bedtime dose may be an effective prophylactic measure in patients with nocturnal asthmatic attacks. Aerosol administration is more effective than oral administration, but it is irritating to an already inflamed mucosa. In acute urticaria or angioneurotic edema antihistaminic compounds are very effective, but in chronic cases the results are less certain. If serum sickness is treated early the therapeutic results are good. The results in atopic dermatitis (eczema or neurodermatitis) are good, particularly for the eczematous cases with urticarial edema or toxic erythema; contact dermatitis, including poison ivy, insect bites, etc., responds in some cases. Topical application also provides the local anesthetic action of the antihistaminic and the protective covering action of the vehicle. The objection to the application of ointments to acute oozing skin lesions must not be forgotten. Topical application is useful in the management of pruritus ani and vulvae and in senile pruritus. In measles and varicella these compounds are helpful for pruritus and conjunctivitis.

These drugs have proved useful in parkinsonism probably by virtue of their side effects (hyoscine-like); compounds of the diphenhydramine type with prominent sedative action are the most effective. Night cramps in the legs of older people have been relieved by this chemical group of antihistaminics. Some cases of hyperemesis gravidarum and of roentgen illness are benefited. Sea and car sickness are prevented and relieved by this group of antihistaminics. In postvaccinal encephalitis (such as following rabies vaccine) the antihistaminics provide a useful therapeutic agent.

Sedation is the most common side effect. Other side effects are dizziness, dry mouth, weakness, nausea, nervousness (jumpy), diplopia, and sweating. Intolerance to one drug does not mean untoward reactions to all the antihistaminic drugs. The drowsiness is often a desirable therapeutic effect, particularly at bedtime. In the working patient, however, drowsiness may create an accident hazard. In severe and even fatal poisoning, symptoms include lethargy, drowsiness, shallow respiration, and cyanosis, followed by nervousness, twitching, coma, convulsions, fever, and tachycardia. Hista-

mine is not an antidote to poisoning with these drugs. In mild cases of depression stimulants such as caffeine or amphetamine sulfate are indicated. For the excitation with twitching and convulsions following the larger doses sedation is indicated with a rapidly acting barbiturate intravenously or with ether in oil rectally.

Summary:—These drugs seldom cure anything, but their use often makes the patient comfortable and, in some instances, prevents secondary complications and shortens the course of the illness. The dose is enough to control symptoms without undesirable side effects. 4 references.—*Author's abstract.*

The Principle of Screening Antibiotic-Producing Organisms, with a Note Concerning a Modified Procedure Intended to Yield Certain Special Antibiotics. SELMAN A. WAKSMAN, AND HUBERT A. LECHEVALIER, New Brunswick, N. J. *Antibiotics and Chemotherapy* 1:125-32, May 1951.

The principle of screening antibiotic producing organisms is based on the fact that antibiotics are characterized by well-defined and constant antimicrobial spectra. The antibiotic produced by Actinomycetes, especially those that have found application in chemotherapy, are classified into (1) basic and stable water soluble compounds, insoluble in organic solvents, including streptothricin, streptomycin and neomycin; and (2) neutral or amphoteric unstable compounds, soluble in organic solvents, and including chloromycetin, aureomycin, and terramycin. The method of screening is modified in such a manner as to obtain organisms capable of producing substances falling within each of the two categories. This study yielded a culture which produces a substance falling within the second category. 6 references. 2 figures. 5 tables.—*Author's abstract.*

Diameter of Inhibition Zones Correlated with Tube Sensitivities Using Six Antibiotics. WILLIAM C. PATRICK, GEORGE H. CRAIG, AND MARVIN C. BACHMAN. *Antibiotics and Chemotherapy* 1:133-37, May 1951.

The purpose of this paper was to compare and correlate, if possible, the results of two methods of obtaining bacterial sensitivities. These two procedures were: (1) inhibition zones obtained on streaked agar plates using antibiotic-containing tablets, and (2) the minimum inhibitory concentrations in broth. Fifty-eight freshly isolated and frequently encountered pathogens were used in this study. A limited correlation was found to exist between the two methods.—*Author's abstract.*

NERVOUS AND MUSCULAR DISORDERS AND DISEASES

Headache Mechanisms and Their Relation to Diagnosis and Management. GEORGE A. WOLF, JR., New York, N. Y. *Pennsylvania M. J.* 54:25-30, Jan. 1951.

Adequate stimuli to the pain-sensitive structures resulting in headache are inflammation, traction and displacement of nerves, venous sinuses, and large arteries at the base of the brain by expanding intracranial lesions and disturbances in vascular functions, such as dilatation of the larger arteries of the cranial cavity and scalp.

Differential diagnostic points are mentioned. Vascular headaches are described in detail. Pain, temporal relationships, personality characteristics of patients with migraine, and situational factors in the development of migraine are discussed. The physiologic aspects of the diagnosis of migraine are considered. The mechanisms of allergic headaches, sinus headaches, eye headaches, and muscle-tension headaches are discussed briefly. Medical therapeutic technics, as well as simple psychotherapeutic procedures, are described in the management of headache. Emphasis is placed on the accurate diagnosis of the particular type of headache, with due consideration to the mechanisms involved. It is pointed out that the diagnosis of headaches not associated with a structural disease of the head is to be made on a positive basis and not by exclusion.—*Author's abstract.*

Muscular Dysfunction Under Emotional Stress: Diagnosis and Treatment. A. D. JONAS, Bronx, N. Y. Am. Pract. 2:36-44, Jan. 1951.

The effect of muscular contraction, according to the work performed, is divided into (1) *Static or automatic*—maintenance of posture, (2) *Useful*—visible and purposeful activity, (3) *Intermediary*—auxiliary muscular contraction such as gestures, facial grimaces, postural changes, (4) *Useless*—partially or completely inhibited muscular activity such as making a fist, gritting the teeth, tossing in bed while asleep, rigid posture, etc.

The nervous impulses responsible for the useless muscular contractions are sustained and out of proportion to the required task in their duration and intensity. They elude conscious recognition, although some are sufficiently near consciousness to permit full awareness if properly pointed out. The useless muscular contractions are responsible for many conditions commonly classified as chronic myositis, fibromyositis, and also certain forms of arthritis.

Consciously or unconsciously, repressed hostility may be translated into either an increase of the tonus of the muscles which should have been called into action had there been no inhibition or into contraction of certain groups of muscles to express hostility in symbolic form. Repressed emotions may select, in the more severe forms, the entire musculature, or in milder forms, isolated peripheral muscle units:

1. *Occipito-frontalis muscle.*—The frontal portion expresses conscious inhibition to verbalize aggressive thoughts. The occipital portion may be called on to express unconscious hostility.

2. *Facial muscles.*—Fear and depression immobilize facial features. Emotionally frozen face may be confused with Parkinson's disease. Spasmodic contractions point to deep-seated psychologic disturbances that are the unsuccessful attempt to cope with the original trauma.

3. *Masticatory muscles.*—A tonic contraction is characteristic for suppressed rage reaction. A protruding jaw caused by the interplay of all the masticatory muscles is seen in energetic individuals. Symbolically they are ready to bite their teeth into whatever difficulty they may encounter.

4. *Muscles of the sensory organs.*—Increase of tension of the tensor tympani and stapedius muscles will create an abnormal vibration of either the eardrum or the

oval fenestrum, producing forms of psychogenic tinnitus aurium and Meniere's syndrome. Increased tension may cause abnormal pressure on the eyeball leading eventually to refraction abnormalities.

5. *Vocal Chord muscles*.—Increase of tension is seen in anxiety states. A hysterical paralysis leads to the familiar picture of aphonia.

6. *Neck muscles*.—Their function, to keep the head up or erect, is exaggerated when environmental situations are getting the individual down. In the severe or prolonged forms, the neck muscles are creating an abnormal pressure on the cartilages of the cervical articulations, thus leading to eventual pressure atrophy and the changes characteristic of arthritis.

7. *Spinal muscles*.—Rigid spinal muscles are characteristic of pent-up tension. Prolonged pressure on the cartilages will eventually lead to arthritic changes.

8. *Diaphragm, Intercostal and accessory respiratory muscles*.—In depressive states, respiratory muscles receive fewer stimuli, resulting in shallow breathing. Insufficient aeration of the bronchial tree leads to stagnation of bronchial secretion, thus predisposing the individual to infection. A tonic contraction of the sternal and left portion of the diaphragm gives rise to pain in the left chest or left upper quadrant which may be confused with cardiac, gastric, or pulmonary pathology. A tonic contraction of the right costal portion gives rise to pain in the right chest or right upper quadrant, thus simulating pleurisy, liver, or gallbladder disease. Lumbar portion gives rise to pain in the lumbar region.

9. *Abdominal muscles*.—These conform to the general pattern. Increased tension is seen in tense individuals.

10. *Muscles of the extremities*.—Pseudoparalysis may occur, as seen in hysteria. A somato-psychic phenomena is a change in the emotional tone, taking place because of variation in the physical state of the various organ systems. Stretching or massage of muscles calls forth sensations of pleasure. In some individuals manipulation of certain muscles will call forth specific sensations or memories. The various aspects of therapy and their role in regard to the psychologic make-up of the patients are discussed. 1 reference.—*Author's abstract*.

DEFICIENCY DISEASES AND METABOLIC DISORDERS

Rapid Transformation of Cretins with Large Doses of Thyroid. EDWARD E. BROWN, Ashland, Ore. Northwest Med. 50:22-25, Jan. 1951.

Two cretins, treated by many physicians with one-quarter and one-half grain desiccated thyroid substance, made little mental and physical progress over a period of many months. When increased to a dose varying between 2 and 4 grains daily, gratifying transformation mentally and physically was noted in a short time. Proof is shown that large doses of thyroid enable the cretin to regain some of his lost growth, heretofore a controversial point. The optimal dose will produce toxic symptoms which should be distinguished from dangerous symptoms. Toxic symptoms probably indicate a slight degree of hyperthyroidism and must be tolerated for a time in order to compensate for that period when growth and development lagged. Toxic symptoms include

rapid pulse, mildly elevated temperature, initial loss of weight, increased nervousness, and frequent bowel movements. Dangerous symptoms are extreme restlessness, twitching, diarrhea or vomiting, continued loss of weight, very rapid pulse rate, high fever, and syncope. The physician must take the responsibility of prescribing the large optimal dose of thyroid if he can see the child at frequent intervals. To give less is to deprive the cretin of his only chance for full mental and physical development. 12 references. 9 figures.—*Author's abstract.*

Lessons for Future Treatment from 472 Fatalities in Diabetic Children. ELLIOTT P. JOSLIN, M.D., AND JAMES L. WILSON, M.D., Boston, Mass. Brit. M. J. No. 4692:1293, Dec. 9, 1950.*

Our diabetic children are living a great deal longer than formerly, yet they still die prematurely and, as a rule, unnecessarily. We were much encouraged to learn that the average duration of diabetes in the 135 children who succumbed in 1944-49 exceeded the average duration in those dying in the previous six year period, 1937-43, by approximately eight years, and that they were eight years older when they died. However, we were much discouraged to learn that tuberculosis and coma played a far more important part in mortality than among all our cases, young and old. In fact, these two preventable complications caused 21.5 per cent of the deaths.

The cardiorenal-vascular group based upon combined clinical and postmortem data in 15 instances accounted for 59.3 per cent of the deaths, 51.9 per cent being renal. The future holds even greater promise for diabetic children, because we believe not only that the number succumbing to tuberculosis and coma can be reduced but that progress can be made towards decreasing the large number of deaths now resulting from complications in the kidney.

The causes of death of 472 children are recorded in successive periods from 1898 to 1949. Of the 2,873 diabetic children seen, with onset before 15 years of age, up to the end of 1949, 2,381 were living and only 20 untraced at January 18, 1950.

The incidence of deaths due to diabetic coma has steadily dropped from 86 per cent in the pre-insulin era to 9.6 per cent since 1944, while the frequency of cardiorenal-vascular disease has steadily risen from 0.6 per cent to 59.3 per cent.

Inspection of the cardiorenal-vascular group discloses that only 2 cases of renal disease were recorded prior to 1937. Angina pectoris or coronary disease, likewise, did not appear until 1937. Apoplexy was observed only once among these children before 1944 and in only 3 cases since that time. As for gangrene, only two deaths were noted among the total number.

The children lived for so short a time prior to the discovery of insulin that none was recognized as dying from tuberculosis until the period 1922-36; and, indeed, until this present detailed follow-up of all our cases was made, we really did not appreciate that this cause had reached 11.9 per cent from 1944 to 1950.

Tuberculosis.—Of the 135 fatal cases among children in 1944-49, there were 15 (11.2 per cent) whose lives ended in tuberculosis after an average of 13.2 years of

*Aided by a grant from the Life Insurance Medical Research Fund. Statistical analyses prepared by Statistical Department, Metropolitan Life Insurance Company.

diabetes. These cases belonged to the underprivileged group, and it was plainly evident they had not been sufficiently followed up. They had not had yearly x-rays.

Diabetic Coma.—Twelve (8.8 per cent) of the 135 deaths in this group of juvenile diabetics were directly attributable to diabetic coma. The average duration of the disease before the fatal attack of coma was 10.0 years and the fatal complication occurred in the group at an average age of 17.9 years. Not one of these 12 patients was treated at the New England Deaconess Hospital or seen by any one of our staff during the terminal illness.

Arteriosclerosis. Causes of Death of Juvenile Diabetics, 1944-49.—A review of the antemortem clinical records of the 135 patients whose deaths occurred in 1944-49 was revealing. It was particularly informative in those 76 cases in which death was attributed primarily to cardiorenal-vascular causes, of which only 50 originally were recorded as renal, whereas there was definite evidence that 13 other cases, grouped as cardiac deaths on the death certificate, had had severe renal disease for several years before their sudden exitus.

The information disclosed by this critical analysis of the fundamental disease of the patient, as contrasted with the reported terminal event assigned on the death certificate, we believe to be of great significance. Among the diabetic children the true complication which we must combat is renal rather than cardiac.

Proteinuria invariably preceded the elevation of blood pressure, thus strongly supporting the thesis that the condition was primarily renal in origin rather than attributable to the onset of essential hypertension.

Most postmortem examinations of children dying with diabetes mellitus reveal a mixture of several types of renal pathology, including pyelonephritis, intercapillary glomerulosclerosis, and arteriolosclerotic and arteriosclerotic disease. This was strikingly true in the 15 necropsies in this group. An exception to this general finding was, however, a case in which careful microscopic analysis failed to show evidence of any kidney lesions other than those of chronic glomerulonephritis, despite the fact that before her death the patient showed the classic symptoms of vascular nephritis and was in clinical uremia terminally. In this case no arteriosclerotic renal changes were evident, although atheromatous changes were described in the aorta and coronary arteries.

Above all else, these 135 deaths of diabetic children within the last six years—11.2 per cent from tuberculosis, 8.8 per cent from diabetic coma, and 51.9 per cent from renal disease—show that the diabetic with onset of disease in childhood should be followed more closely. Only in this way can needless deaths be avoided. Continuity of treatment is essential. Roentgenograms of the chest should be taken yearly. A constant awareness for evidences or incipient signs of renal disease must be maintained. Research should be concentrated on the kidney in the young diabetic. The importance of postmortem examinations cannot be emphasized too strongly.

To preserve in comfort and prolong the lives of diabetic children the need is paramount for inexpensive and attractive opportunities in children's and adolescents' camps, and especially in hospitals, of reviewing their physical condition and promoting morale and zeal for the continuing control of their diabetes.

Blood Lipid Fractions and Diabetic Neuritis. OTAPAR V. SIREK, ALEXANDER BONKALO, AND JAKOB MOLLERSTROM, Stockholm, Sweden. Arch. Int. Med. 85:966-71, June 1950.

In the present paper the relation between the maintenance of the peripheral neuritis and the blood lipid fractions as total fat, cholesterol and lipid phosphorus in 46 diabetic subjects is discussed. A tendency toward hyperlipemia has been apparent in diabetic patients with nervous alterations, while in those without them the rates have shown a tendency to keep within physiologic limits. This opposed tendency in both groups of patients was just appreciable regarding total fat, while in the case of lipid phosphorus the tendency was striking, and a statistically significant difference was also obtained. An exception were the cholesterol figures, which did not show any correlation to diabetic neuritis. Five patients with neuritis (11 per cent) had a dysplastic habitus with obesity of the Cushing type.

The significance of the relation between diabetic neuritis and the increased amount of phospholipids in the blood plasma and also the influence of arteriosclerosis are further discussed. The opinion is expressed that diabetic neuritis not only is due to arteriosclerosis but also is due to disturbances in the fat metabolism; in this regard attention should be directed more toward the metabolic centers and the pituitary body. 9 references. 2 tables.

Relation Between Neuritis and the Clinical Background in Diabetes Mellitus. ALEXANDER BONKALO, Stockholm, Sweden. Arch. Int. Med. 85:944-54, June 1950.

A homogeneous series of 150 persons with diabetes was analyzed under uniform conditions in order to find out how closely factors in a diabetic background are connected with development and maintenance of neuritis. In 74 patients (49.3 per cent) objective symptoms of diabetic neuritis were noted, whereas no neuritic involvement was found in the remaining 76 patients. An attempt was made to establish a relation between the diabetic neuritis, on the one hand, and the blood sugar level, ketone body excretion and body habitus, on the other. It emerged that there was a certain relation between the sugar content of blood and the neuritis, in that the patients with neuritic involvement, on an average, had a higher blood sugar level than those without neuropathy. The import and the therapeutic aspects of this matter are discussed. Ketone bodies had no connection with these findings. An analysis of the build of body in our material yielded no definite results but supported the supposition that the incidence of diabetic neuritis is higher among young patients with an obese and dysplastic habitus. 11 references. 6 tables. 1 chart.

Pathology of the Neurohypophysis with Special Reference to Diabetes Insipidus. J. E. JOHNSON, JR., Galveston, Texas. Texas Rep. Biol. & Med. 8:583-616, Winter 1950.

Diabetes insipidus (DI) is the only clinical syndrome unquestionably related to disease of the neurohypophysis. Data is tabulated from 12 cases of DI at the John Sealy Hospital for comparison with two large series reported by others.

Etiologic factors reported in the literature are listed. "The diagnosis of DI is made on the basis of excessive water exchange and low urinary specific gravity after other possible causes have been ruled out." Diagnostic testing with pitressin and hypertonic sodium chloride and the difficulty of establishing a diagnosis in the presence of renal disease are discussed.

Treatment of DI involves management of the underlying cause, if one can be found, and specific hormonal replacement. For the latter, pitressin tannate in oil or posterior pituitary powder appear to be the most satisfactory. Restriction of sodium chloride, thyroidectomy, transplant of human hypophysis, and a variety of other therapeutic procedures are discussed.

Conditions possibly involving a hyperactivity of the neurohypophysis, on the basis of assay of antidiuretic substances in blood and urine, include some cases of cirrhosis, nephrosis, premenstrual edema, preeclampsia, and hypertension. The relationship of the neurohypophysis to uterine inertia is suggested by review of clinical and experimental observations.

The history of experiments directed at neurohypophyseal function is reviewed. Experimental data appears to support the concept of polydipsia of DI being consequent to a primary polyuria. The present concept of DI is that polyuria may follow a lesion of the supra-optic nucleus of the anterior hypothalamus, of the neurohypophysis, or a lesion interrupting the supra-opticohypophyseal nerve tract. Recently the various pathologic phenomena of Cushing's syndrome have been attributed to neurohypophyseal hypoactivity. In this connection the original stimulus to activity arises in the paraventricular nuclei of the hypothalamus which, through the neurohypophysis, are essential to the integrity of the basophils of the anterior lobe. 142 references. 2 figures. 3 tables.—*Author's abstract.*

Radioactive Iodine in the Treatment of Hyperthyroidism. E. PERRY MCCULLAGH, AND CHARLES E. RICHARDS, Cleveland, Ohio. Arch. Int. Med. 87:4-16, Jan. 1951.

The indications for the administration of I_{131} have been: (1) one or more post-operative recurrence of hyperthyroidism, (2) old age, (3) poor cardiovascular status or the existence of severe concurrent disease of another type, (4) aversion to surgical treatment, (5) one or more recurrences after discontinuance of therapy with propyl or methyl thiouracil or toxic reactions to the thioureas. In spite of the remote possibility of carcinogenic properties, the trend is toward leniency in I_{131} indications—even in nodular goiter.

The initial dose in Graves' disease (diffuse goiter) is 4.0 mc. for a gland estimated to weigh 30 Gm. and 1.0 additional mc. for each additional 10 Gm. of gland. The original dose was repeated in those patients showing no improvement in two months. In patients reaching a point half-way normal, the original dose was halved. In those patients showing a relatively good response and a basal metabolic rate below plus 20 per cent, treatment was postponed for an additional two months, since improvement may continue for more than three months.

Prior to January 1950, 203 patients with Graves' disease were treated. Sixty-three per cent of these patients were over 40 years of age; nearly 20 per cent were below

30 years of age. There was little correlation between basal metabolic rate and dose required. However, the size of the gland and dose required were much more closely related. The recurrence rate in this series was about 3 per cent, and the only complication was hypothyroidism, which appeared in 10 per cent. Exophthalmus was neither increased nor prevented by radioactive iodine.

Under ordinary circumstances, surgery is considered the treatment of choice in nodular goiter. If surgery is impossible or undesirable, such hyperthyroidism can be controlled by I_{131} . Seventy-eight patients were so treated. The curability of the hyperthyroidism in nodular goiter is quite a different problem from that in toxic diffuse goiter, insofar as I_{131} therapy is concerned; much larger doses and a longer time are required. Twenty-three per cent of 78 patients are still hyperthyroid. Hypothyroidism has not been seen. In view of these observations, the authors are inclined to begin with an initial dose of 20 mc. or more in nodular goiter. 6 references. 2 figures. 12 tables.—*Author's abstract.*

A Source of Error in the Determination of Basal Metabolic Rates by the Closed-Circuit Technic. HAROLD N. WILLARD, Claverack, N. Y., AND GEO. A. WOLF, JR., New York, N. Y. Ann. Int. Med. 34:148-62, Jan. 1951.

Changes in the expiratory position of the chest, occurring during the course of a spirogram done with the Benedict-Roth closed circuit apparatus, have a marked effect on the slope of the tracing. When these changes occur progressively and evenly, they are not detectable either as irregularities in the 6 or 12 minute tracing or by close observation of the subject's respiration. By its effect on the slope of the spirogram, a change in chest volume may produce either a falsely low or a falsely high apparent metabolic rate. The use of the chest pneumograph and measurements of complementary airs are discussed as simple clinical means by which changes in chest volume could be observed and are shown to be inadequate. This potential source of error in the closed circuit spirometer must be considered in measurements of basal metabolism. 3 references. 6 figures. 2 tables.—*Author's abstract.*

Significance of Arterial Blood Sugar in Spontaneous Hypoglycemia. MAXIMILIAN FABRYKANT, New York, N. Y. Am. J. M. Sc. 221:61-70, Jan. 1951.

Determinations of venous blood sugar are valuable as an index of sugar utilization in diabetes, but in hypoglycemic states the arterial blood sugar is more significant since the supply of sugar to the tissues is by way of the arterial and not the venous blood. Oral and intravenous glucose tolerance tests, as well as fast tests, were carried out in 12 subjects with a history of spontaneous hypoglycemia, and the true sugar content of both the venous and arterial blood was determined. A positive arterio-venous glucose difference (AVGD) was noted during the first two to three hours of the tolerance tests. During clinical hypoglycemic episodes, in the later phase of tolerance tests as well as in fast tests, there was a marked decline in arterial blood sugar values, often to levels lower than in the venous blood. This arterial hypoglycemia was well correlated with the intensity of clinical symptoms. The AVGD was reversed

in most hypoglycemic episodes and uniformly negative in severe attacks. There was no correlation between the rate of fall of the blood sugar and the development of symptoms. It is concluded that (1) glucose tolerance tests confined to two or three hours of observation are inadequate to establish the diagnosis of spontaneous hypoglycemia—the hypoglycemic reactions become manifest when the tests are carried out for at least five hours; (2) the study of the arterial blood sugar is of considerable importance for the diagnosis of hypoglycemic states since the use of venous blood alone may yield conflicting results. 30 references. 4 figures. 2 tables.—*Author's abstract.*

The Manubrio-Sternal Joint in Rheumatoid Arthritis. ANDREW BOGDAN, AND JUSTIN CLARK, London, England. *Brit. M. J.* 1361-62, Dec. 1950.

Five cases of rheumatoid arthritis involving the manubrium joint are described. In the early stages there was pain, swelling, and tenderness at the joint site—these may be the first manifestations of the disease. The pain may be constant or show periodicity. In all cases it was aggravated by respiratory movements and, in particular, by coughing, sneezing, yawning, deep inspiration, and hence on exertion. The pain has to be distinguished from other causes of chest pain, and in 1 case its precipitation by exertion simulated angina of effort. Soft tissue swelling was prominent in 2 cases. Tenderness over the joint was present in all cases, but as an isolated finding was not considered sufficient to justify the diagnosis, because this area may be sensitive in normal people, particularly those with a prominent sternal angle. Radiologic changes were present in 3 cases, included soft tissue swelling, irregularity and narrowing of the joint space, erosion of the articular surfaces, and irregular expansion of the articulating ends of the manubrium and sternum. Progression to bony ankylosis was not observed in any of the cases. The joint was best visualized in coned lateral views; routine lateral chest films usually were not satisfactory. The joint picture may be obscured by superimposition of calcification in the second costal cartilage or in the presence of a depressed sternum. 5 references. 1 figure.—*Author's abstract.*

Arthritis As Related to Gastroenterology. PETER J. WARTER, Trenton, N. J., STEVEN HOROSCHAK, AND R. LEY, Park, Pa. *Rev. Gastroenterol.* 18:70-75, Jan. 1951.

Any approach to the diagnosis and treatment of arthritis which fails to take the gastro-intestinal system into consideration invariably will fail to be therapeutically profitable to the patient.

Although the etiology of degenerative or osteo-arthritis has not been definitely established, nevertheless it has been observed that many patients diagnosed as osteoarthritis, date their symptoms for many years to muscular rheumatism with a prolonged history of gastro-intestinal complaints referred to as bilious spells, sick headaches, or "gas indigestion." The etiology of rheumatoid arthritis is still controversial. However, such findings as increased sedimentation rate, leukocytosis (in acute forms), and the accompanying inflammation of synovial membrane and peri-articular tissues strongly suggest an infective basis.

It has been suggested that focal infection in the colon is a common and important factor in rheumatoid arthritis. An abnormal intestinal flora produces stasis with local foci of infection and damage to the mucous membrane. Joints and muscles injured by previous exposure to streptococcal toxins become sensitized before they become susceptible to the toxins. The irritant sets up an acute inflammatory reaction, localizing it by the development of a lymphatic blockade which tends to wall off the irritant. Once a synovial reaction to a substance arriving by way of the blood stream becomes established, it tends to become more intense because a local increase in capillary permeability permits the deposition of still larger amounts of the offending agent. Nutrition plays an important role in both of the above arthritides.

There are specific arthritides accompanying gastro-intestinal disease: bacillary dysentery, typhus infections, and infectious jaundice. Deficiency diseases also are accompanied by arthritic symptoms, for example, arthritis associated with scurvy, pellagra, beriberi, and others. Medicaments used in the treatment of arthritis produce an irritating and sometimes a deleterious effect in the gastro-intestinal tract. Unless a history of ingestion of such drugs, i.e., aspirin, cincophen, colchicine, vitamin D, or injections of gold salt, prostigmine and steroids is obtained, the physician may be at a loss to eliminate the gastro-intestinal disorder. It is well to inquire into the nature of previous therapy.

To make the treatment of the arthritides therapeutically profitable to the patient, the physician must give serious consideration to the gastro-intestinal system in making a diagnosis and in outlining a therapeutic regime. 26 references.—*Author's abstract.*

Criteria for an Interpretation of Normal Glucose Tolerance Tests. H. O. MOSENTHAL, AND E. BARRY, New York, N. Y. Ann. Int. Med. 33:1175-94, Nov. 1950.

In the aged, there was no impairment of glucose tolerance. This is contrary to accepted beliefs, which have been based largely on hospitalized individuals. Blotner has shown that bed rest interferes with blood sugar curves, and our observations solely on ambulant persons confirm this. It is probable that a diminished carbohydrate tolerance, accredited to arthritis and other diseases, may be similarly explained.

The frequently great (as high as 78 mg. per cent), very variable, and unpredictable amounts of nonglucose reducing substances included as glucose by the Folin-Wu method make it obvious that serious analytic errors may be avoided by resorting to a true blood sugar method. The marked and inconstant arteriovenous blood sugar difference developing after the ingestion of glucose makes the interpretation of the glucose tolerance curves based on the arterial blood sugar less accurate, especially at the two hour point, than those based on venous blood sugar determinations. The presence of marked arteriovenous blood sugar differences indicates that the peripheral tissues (muscle and skin) are active in disposing of glucose, and that the removal of glucose from the blood is not carried out solely by the liver.

The renal threshold to glucose should, obviously, be read with the arterial and not the venous blood sugar as a guide. The prevalent idea that the renal threshold to glucose is lower on the downstroke of the glucose tolerance curve than on the upstroke,

based on venous blood sugar levels, is probably incorrect because the arterial blood sugar often rises from the half to the one hour mark, while the venous blood sugar falls during this period. The renal threshold to glucose, as measured by the true arterial blood sugar, was found to be fairly constant at 200 mg. per cent.

The absorption of glucose from the small intestine is recorded more accurately by the arterial blood sugar than by the venous blood sugar. Most of the errors commonly encountered in the glucose tolerance tests in normals may be avoided by the use of true blood sugar determinations on venous blood in ambulant individuals. The criteria for normality with this method are 100 mg. or less of glucose per 100 cc. of blood in the fasting state; a maximum height of the curve of 150 mg. or less; and two hours after the ingestion of 100 Gm. of glucose, a level of 100 mg. or less. A diminished carbohydrate tolerance is indicated when both the height of the blood sugar curve and the two hour values are elevated. 29 references. 6 tables. 4 charts.—*Author's abstract.*

ALLERGIC DISORDERS AND DISEASES

Bronchoscopy in Allergic Diseases of the Chest. THOMAS H. MCGLADE, Camden, N. J. J. M. Soc. New Jersey 48:22-26, Jan. 1951.

Twenty-five cases of allergic diseases of the chest were studied in regard to the bronchoscopic findings and the therapeutic results obtained. The cases were divided into four groups:

1. *Persistent Unproductive Cough*—The bronchoscopic findings are not specific. Usually, the mucosa is pale, and there is some expiratory collapse of the posterior bronchial wall. The secretion is mucoid in character, extremely tenacious, and scant in amount. It is amazing how frequently the persistent cough is relieved by aspiration, even though little secretion has been removed.

2. *Chronic Asthma and Emphysema*—The cough sounds moist but is extremely inefficient. At times, the rattle of secretions can be felt over the trachea and main bronchi. The patient often has resigned himself to the fact that it is impossible for him to clear his air passages by coughing. Removal of secretion relieves the dyspnea, oxygenation is improved, and the cough diminishes.

3. *Asthma with Secondary Infection*—Asthma is often initiated by infection and, if chronic asthma is present, infection is the most important aggravating factor. In this group of cases, bronchoscopy is a great aid. Because of the difficulty in expectoration, drainage of the lung is impeded and toxicity results. If the condition is ignored or goes unrecognized, chronic changes in the bronchi, namely, bronchiectasis, will be the end result.

4. *Severe Asthma*—The persistent dyspnea threatens life itself. Aspiration of tracheobronchial secretions can bring about dramatic relief. Observation of the tracheobronchial tree in status asthmaticus shows the mucosa to be red in color, thickened, and there is extreme collapse of the posterior tracheobronchial walls. The secretion is mucoid or mucopurulent, tenacious, and abundant.

General anesthesia may be used, and many bronchoscopists find it satisfactory. However, it is generally believed that the margin of safety is greater with local anesthesia. Pentobarbital is valuable because of its sedative action and also because of its antidotic effect to local anesthetic reaction. The use of morphine sulfate is not considered advisable in allergic individuals. In this series of cases 1 per cent cocaine hydrochloride was used exclusively. The solution was instilled into the larynx with a cannula guided by a laryngeal mirror. No reactions were encountered. Extreme gentleness is essential, and aspiration must be done carefully to avoid trauma to the bronchial mucosa. 9 references, 3 figures.—*Author's abstract.*

Constitution and Asthma. HANS ARNOLDSON, AND UDO PIPKORN, Gothenburg, Sweden.
Acta Med. Scandinav. 138:446-48, Nov. 1950.

The authors made investigations concerning the constitution of 50 patients with bronchial asthma. First, analysis of the habitus resulted in the following: leptosome habitus (Kretschmer) is prevailing, and there is little hair on the body, the legs, armpit, and privy parts inclusive. Over 50 per cent of patients had long legs in relation to body length. Therefore, an endocrine component (eunochoid) is suggested.

The second part of the papers reports relations in metabolism, albumen in blood, potassium and white blood cells which showed normal basal metabolism, normal quantitative relations in albumen, preponderance of normal potassium rhythm (Husssel) with low morning and higher evening values and a peculiar curve type of potassium values after intramuscular injection of 15 international units of insulin. More than 50 per cent of the patients showed a nearly resistant curve type of potassium values, and the authors documented a pathognomonic factor in this. There was a decrease of leukocytes and increase of lymphocytes and eosinophils after the intramuscular injection of $\frac{1}{2}$ mg. histamine or 4 cc. 1 per cent novocaine intravenously instead of, as in normal control persons, increase of leukocytes and decrease of lymphocytes and eosinophils. 3 figures, 6 tables.—*Author's abstract.*

The Use of Dibenamine in the Severe Asthmatic State and Related Chronic Pulmonary Conditions. S. D. KLOTZ, AND CLARENCE BERNSTEIN, Orlando, Fla. Ann. Allergy 8:767-71, Nov.-Dec. 1950.

Dibenamine, a new adrenergic blocking agent, was used as a therapeutic adjunct in cases of severe bronchial asthma and chronic pulmonary disease with anoxia. It was administered additionally, either orally or intravenously, to 20 patients who had received little or no relief or even deterioration in their condition to the customary sympathomimetic drugs, aminophyllin and similar derivatives, antibiotics and aerosol mechanisms. Clinical improvement was noted within 8 to 14 hours with marked amelioration symptoms within 48 hours. The only frequent adverse side reaction was nausea with or without vomiting.

Dibenamine was felt to be of value in these states because of its sympathoadrenolytic effect which reverses the noxious vasopressor responses to epinephrine but does not alter its inhibitory effect on the bronchial musculature. In this manner the increased

pulmonary arterial tension and congestion that develop are decreased and, consequently, both the pulmonic and systemic circulations are improved. Dibenamine also appears to increase markedly the body tolerance for sympathomimetic substances as well as the sensitivity to their inhibitory effects, a property that may be of particular help in so-called "adrenaline-fast" states. 10 references.—*Author's abstract.*

Food Allergy. MILTON MILLMAN, San Diego, Calif. Ann. Allergy 8:781-83, Nov.-Dec. 1950.

There is no perfect elimination diet satisfactory for everyone. Such a diet must be made by taking into consideration the history of foods that are suspect, avoidance of common allergens, and the elimination of skin positive foods. The diet becomes basic for any patient when there ensues freedom or a minimum of symptoms. Each new food is subsequently added to the basic diet singly, twice a day if possible, and then continued at least four days before it can be declared innocuous.

A diet list of foods is presented. It has the following advantages: (1) The physician can have the diet printed in pads and kept on his desk. (2) It is not necessary to know many different types of diets, each of which has to be modified anyway. (3) It can be easily balanced nutritionally. (4) The printed list has several different choices of each item so that removal of certain foods is easily accomplished and new additions can be made as indicated. (5) For the initial diet, the physician can and must know each of the foods, as to the frequency of sensitization, nutritional value, methods of preparation, and what the skin test means for each food with his extracts and method of testing. Few patients get the diet as printed. It is a list of foods, divided into separate meals, which is modified easily and quickly for each patient.—*Author's abstract.*

The Mechanism of the Anaphylactoid Phenomenon. PAUL GROSS, Pittsburgh, Pa. Am. J. M. Sc. 221:46-50, Jan. 1951.

The only anatomic finding which is peculiar to, and characteristic of, the anaphylactoid phenomenon is pulmonary vascular occlusion (involving the smallest vessels) and the associated dilated right heart. Death from diffuse pulmonary vascular occlusion may occur following the intravenous injection of small amounts of chemically inert, finely divided particulate matter. The lethality of the phenomenon is a function of the particle size. In the dosage employed, particles over 0.6 micron in size did not kill, while particles 0.2 micron in size produced 100 per cent mortality.

In vitro experiments demonstrated the formation of sticky aggregates when fine particles are suspended in blood plasma. These aggregates form as a result of adsorption of protein to the particles. Chemical analysis of such aggregates washed free of plasma have demonstrated the presence of adsorbed protein. There is an inverse relationship between the particle size and the amount of protein adsorbed.

Perfusion of rabbit lungs with plasma free of fibrin or formed elements, but containing small amounts of finely divided particulate matter, resulted in pulmonary vascular occlusions identical to those seen in animals dying with symptoms typical of the anaphylactoid phenomenon. 6 references. 2 figures. 2 tables.—*Author's abstract.*

BLOOD AND LYMPHATIC DISORDERS AND DISEASES

The Role of the Hypophyseal-Hypothalamic System in the Pathogenesis of Erythrocytosis and Symptomatic Polycythaemias. E. HAYNAL, AND F. GRÁF. *Acta med. Scandinav.* 139: f. 1, 1950.

Experimental data and clinical observations suggest some relationship between the hypophyseal-hypothalamic system and hematopoiesis. Functional tests performed on 10 patients suffering from polycythemia vera demonstrated hyperfunction of the hypophyseal-hypothalamic system. In cases of symptomatic polycythemia (congenital heart disease, congestive cardiac failure) the hyperfunction of the hypophyseal-hypothalamic system could also be established. Procedures capable of reducing the hypophyseal function (administration of sex hormones, of thiamine, x-ray irradiation) failed to influence the polycythemia, although the functional tests showed a decrease of the pituitary activity. These observations suggest that an increased activity of the erythropoiesis seems to be connected with, or brought about through, the agency (increased activity) of the hypophyseal-hypothalamic system.

Hemopathic Mediterranean Syndrome. PAOLO DE MUR., AND GIUSEPPE LEONARDI. *Acta med. Scandinav.* 138:362-75, April 19, 1950.

We group these clinical types under the term *hemopathic Mediterranean syndrome*. The pathogenetic and hereditary factors of the hemopathic Mediterranean syndrome and the erythroblastic anemia of Cooley are remarkably similar. For this reason many investigators group these two conditions under the term *Mediterranean anemia* (thalassemia). The hemopathic Mediterranean syndrome, as our cases demonstrate, has a great variation in the clinical picture and an incidence higher than that of Cooley's anemia (Magrassi and Leonardi). Its clinical and hematologic variability in the patients and in their relatives suggests that the hemopathic Mediterranean syndrome could be caused by various combinations of several hereditary hematologic abnormalities.

According to many investigators it represents the milder condition (thalassemia minor) of the Mediterranean anemia and depends on the presence of a heterozygous gene by which the morbid condition is transmitted. The Cooley's anemia, on the contrary, is a serious and usually fatal disease stemming from the homozygous constitution of the patient.

We believe that the pathogenetic basis of the hemopathic Mediterranean syndrome and of the erythroblastic anemia of Cooley may be represented, in both conditions, by a particular hemopathic Mediterranean gene, but that other obscure factors may participate in the onset of the two conditions.

The clinical and hematologic features of our patients can be summarized thus:

Case 1. 1) chronic and severe anemia, hyperchromic and macrocytic, in type, associated with anisocytosis, poikilocytosis, hypochlorhydria and fever; 2) retarded physical growth and a Mongolian facial appearance with hypogonadism; 3) marked enlargement of the spleen and slight hepatomegaly; 4) slight jaundice particularly evi-

dent in the sclerae, a positive indirect van den Bergh reaction with increased urobilinogen content of the feces; 5) an increased corpuscular resistance and pronounced fragmentation of the red cells; 6) an increased number of erythroblasts and normoblasts in the sternal bone marrow with some macroblasts and megaloblasts. No erythroblasts and normoblasts in the circulating blood; 7) bone changes on roentgenographic examination (perpendicular hairline striations of the skull); 8) no therapeutic effect on the anemia and on the other symptoms by administration of iron, of liver extract, of folic acid, of the vitamin B complex or by transfusion; 9) hematologic abnormalities of varying degree and type in the other members of the family: in both parents moderate macrocytosis with hyperchromia (in the mother) and increased corpuscular resistance. In one brother (P. F.) a slight anemia, hyperchromic and macrocytic in type, and decreased corpuscular resistance. In another brother (M. F.) and in one sister (Ma. F.) a moderate erythrocytosis with hypochromia, normal corpuscular volume and normal (M. F.) or slightly decreased (Ma. F.) corpuscular resistance; 10) two brothers of the patient died from a condition characterized by anemia and splenomegaly.

Case II. 1) chronic and slight anemia, hyperchromic, and microcytic in type, associated with anisocytosis, poikilocytosis, target cells, a few ovalocytes, and moderate fever; 2) marked delay in physical development resembling a pituitary dwarfism; 3) marked enlargement of the spleen and slight hepatomegaly; 4) icterus with a positive indirect van den Bergh reaction and a high serum bilirubin content associated with a slightly increased urobilinogen content of the feces and urine; 5) marked increase of corpuscular resistance without mechanical fragmentation of red cells; 6) normoblastic hyperplasia of the sternal bone marrow; 7) no abnormalities in the roentgenographic appearance of the skeletal system; 8) no therapeutic effect on the anemia by the administration of iron, of liver extract, of folic acid, etc.; 9) hematologic abnormalities of varying degree and type in the other members of the family: in the father increase of corpuscular resistance, anemia normochromic and macrocytic in type; in the mother normochromic and microcytic anemia with normal hypotonic fragility test; in one brother (G. P.) erythrocytosis with hypochromia and normal corpuscular resistance; the second brother (A. P.) showed hyperchromic anemia with decreased corpuscular resistance; in two sisters (M. P. and L. P.) anemia with morphologic changes of the red cells and normal hypotonic fragility test; 10) all the brothers showed a marked delay in physical development resembling pituitary dwarfism, and in one brother (A. P.) the mental growth was also retarded.

In both cases the increase of corpuscular resistance, the icterus, the splenomegaly and some familial hematologic abnormalities of varying type and degree predominate. The first case shows the characteristics of the Rietti-Greppi-Micheli syndrome or thalassemia minor, but with macrocytic hyperchromic anemia similar to those described by Fanconi, Patrassi and Taglioni and by Haden. The second case, although close to thalassemia minor, did not show abnormalities of the skeletal system, but marked icterus, a marked bilirubinemia with a slight increase of the urobilinogen content of the feces and urine. 33 references. 6 figures. 4 tables.

Urethane Tolerance Tests in Leukemia Patients. BO E. HALLGREN. *Acta med. Scandinav.* 139: fasc. 1, 1950.

We determined the urethane concentration in blood from patients given urethane per os with a colorimetric method described by Shaffer, Le Baron, and Walker. In urethane treatment of leukemia with 1 Gm. three times daily, the urethane concentration in blood will equal about 2-3 mg. per cent. After the administration of a single 2 Gm. dose per os, the blood concentration rises to a maximum of 4-5 mg. per cent in one to two hours. From then on, it decreases gradually, and the urethane seems to be completely eliminated from the blood after a period of 24 hours. By giving 1 Gm. dose every other hour the blood concentration in 2 patients was raised to c:a 8 mg. per cent without any side effects. These explanations indicate that the urethane concentration in blood is not directly responsible for the sickness and nausea felt by some patients on urethane medication at much lower blood levels of the drug. The urethane determinations revealed that repeated small doses give the same average concentration as larger doses administered at longer intervals. This more continuous dosage would make it possible to avoid, perhaps unnecessarily high, toxic peaks in blood concentration. In one case of myeloid leukemia, the same therapeutic effect was obtained with $\frac{1}{2}$ Gm. six times daily for 16 days (total dose, 48 Gm.) as had previously been noted after the administration of 1 Gm. three times daily for 28 days (total dose, 72 Gm.).

Patients with leukemia sometimes show a tendency to lower urethane concentrations in the blood than other patients on the same dosage. This might be due to the fact that the leukemic tissue absorbs part of the administered urethane.

Human Leukemia, with Emphasis upon Recent Therapeutic Experiences. LOWELL A. ERF, Philadelphia, Pa. *Pennsylvania M. J.* 53:1172-81, Nov. 1950.

This paper deals only with the therapeutic experiences in human leukemia. Leukemia is defined, classified, and the etiology and pathology are discussed. Treatment is divided into sustaining agents, inhibitory agents, stimulative agents, and competitive agents. The use of about 50 therapeutic agents is discussed including the use of virus diseases such as dengue virus and rickettsial pox virus. From clinical evidence alone, leukemia seems to be a deficiency disease. No proved case of leukemia has been known to be cured. 45 references. 3 tables.—*Author's abstract.*

On the Pathogenesis of Acute Myeloblastic Leukemia in the Light of Investigations on Granulocytolysis. J. ALEKSANDROWICZ. *Polish Medical Weekly* 5:Nr. 45, 1950.

The author's premise is that a pathogenetic factor of some forms of acute myeloblastic leukemias is to be found in the increased dissolution of granulocytes and a compensative overgrowth of myeloblasts, similar to the hemolytic disease where, owing to the dissolution of red blood cells, the erythroblasts overgrow compensatively. The overgrowth in both cases has neoplastic traits.

To prove his hypothesis the author presents the following data: (1) Acute myeloblastic leukemia begins with a granulocytopenic period. (2) Its clinical picture is

the same as that of agranulocytosis of Werner-Schultz. (3) Clinical statistics of the last decade, compared with previous years, show that agranulocytosis had been diagnosed more frequently in the past than it is at present, while acute myeloblastic leukemias are now recognized more frequently. Apparently the frequency of the disease has not changed; rather, progress in diagnosis and treatment has delayed death until the period of the appearance of myeloblasts in the peripheral blood, instead of earlier. (4) The period of agranulocytosis takes place before the appearance of myeloblasts in the peripheral blood, and not the other way round. (5) Acute myeloblastic leukemia may be induced experimentally by the factors destroying granulocytes, but chronic myeloblastic leukemia (benzen) can not. (6) Professional poisoning by benzen causes myeloblastosis. The professional disease of radiologists is acute myeloblastic leukemia, and not chronic myeloblastic leukemia. (7) The serum of acute myeloblastic leukemia patients contains enzymes of granulocytes, which may be shown by peroxydizing reactions; these are not found in the serum of chronic leukemia patients. (8) The serum of acute myeloblastic leukemia patients is more powerful *in vitro* than a normal serum in destroying granulocytes, while that of chronic myeloblastic leukemia patients checks the destruction of granulocytes.

The difference between acute myeloblastic leukemia and chronic myeloblastic leukemia is seen in the reaction of both these clinical states to x-ray, nitrogranulogen and urethane, all of which are absolutely harmful in an acute myeloblastic leukemia, and have a healing effect in a chronic leukemia. Also, respiration and glycolysis have a different course in the blood cells of patients with acute myeloblastic leukemia and chronic myeloblastic leukemia.

In the light of this hypothesis, that the pathogenetic mechanism in the acute myeloblastic leukemia is similar to that in hemolytic diseases, the author proposes the name *granulocytolytic disease* for these syndromes.

Technical Factors Affecting the Estimation of Serum Gamma Globulin by the Zinc Turbidimetric Method of Kunkel. MAURICE H. FRIEDMAN, Washington, D. C. *Gastroenterology* 17:57-62, Jan. 1951.

Several authors who attempted to repeat the original work of Kunkel were unable to confirm the reported range of normal values for human sera (2 to 8 units). Our own first attempts with this method were similarly unsuccessful until the variability of the barium sulphate standards was fully appreciated. These standards are not uniform when prepared in the usual fashion, and the resulting turbidity is not determined solely by the concentrations and the volumes of the reagents employed. Among the factors influencing the turbidity are: (1) the order in which the reagents are added to each other, (2) the temperature of the reagents at the time of mixing, (3) the temperature at which the suspensions are stored, and (4) the time elapsing between the mixing of the reagents and the turbidity readings. When these factors are properly controlled and standardized, it is possible to secure the same values as those obtained in Kunkel's original publication for normal human sera and for sera from patients with liver disease or other disease processes which result in increased serum gamma globulin concentrations. 4 references. 1 table.—*Author's abstract.*

Marked Lipemia Resulting from the Administration of Cortisone. A. R. RICH, T. H. COCHRAN, AND D. C. MCGOON, Baltimore, Md. Bull. Johns Hopkins Hosp. 88:101-109, Jan. 1951.

The daily administration of 7.5 mg. of cortisone to normal adult rabbits kept on a balanced stock diet produces a marked degree of lipemia, with a rise in both the total fatty acids and total cholesterol of the serum, and striking deposits of visible fat in the liver. There is no constant parallelism between the degree of lipemia and the degree of glycosuria. 17 references. 1 figure. 2 tables.—*Author's abstract.*

Venous Occlusion Plethysmography: A Critical Study. ALFRED J. BARNETT, Melbourne, Australia. M. J. Australia 2:818-23, Dec. 1950.

A brief historical survey of the development of the measurement of peripheral blood flow by venous occlusion plethysmography is given. The main uses of the procedure are in the study of (1) response of blood flow to physical stimuli, (2) site of vascular resistance in hypertensive states, (3) effect of drugs on peripheral blood vessels, and (4) blood flow on peripheral vascular disease.

Air is preferred to water plethysmography because air is the normal environment of man, it does not exert a hydrostatic pressure on the vessels, and there is relative freedom of inertia in the transmitting system. Details of the author's foot and calf air plethysmographs are given. In these, the temperature of the air in the plethysmograph is controlled by means of an outer water jacket; recording is optical using a Wigger's type manometer. Possible errors in plethysmographs are lack of rigidity, presence of leaks, pressure on veins, and insufficient rapidity of response of transmitting and recording systems. The validity of the principle of venous occlusion plethysmography, namely, that the application of the venous occlusion pressure prevents venous return without significantly interfering with arterial inflow over a period of several seconds, is upheld. Errors discussed in the method of venous occlusion plethysmography include production of venous congestion, nonavoidance of leaks, incorrect placing of venous and arterial occlusion cuffs, lack of adequate control of room and plethysmograph temperature.

It is concluded that, although plethysmography is not a method of high accuracy, if possible errors are recognized and precautions taken to minimize them, it may give valuable information concerning the peripheral circulation. 14 references. 7 figures.—*Author's abstract.*

pH of Whole Arterial Blood. RUSSELL H. WILSON, Minneapolis, Minn, with the technical assistance of JOHN OGNANOVICH. J. Lab. & Clin. Med. 37:129-32, Jan. 1951.

The glass electrode is an excellent device for measuring the pH of whole arterial blood. Accurate measurements of the pH of whole blood must be made immediately following withdrawal of blood. The temperature of the blood and equipment must be kept at 37.5 C. by drawing the blood from the artery or vein into a warm syringe; by placing the buffer solutions, glass electrode, and cleaning solution in a constant temperature cabinet. The relationship of changes of the pH of whole blood to temperature

is linear. The pH of whole blood kept at 37.5 C. decreases constantly for a brief period following removal from the circulatory system. Therefore, a system of extrapolation may be used if it is not feasible to measure the pH immediately after its removal from the body. 7 references. —Author's abstract.

GASTROINTESTINAL DISORDERS AND DISEASES

Peptic Ulcer in Man. Part 4. A New Antacid Made To Meet Requirements of Antacid Therapy, Chemical and Laboratory Work. H. NECHELES, Chicago, Ill. Am. J. Digest. Dis. 18:1-7, Jan. 1951.

The use of sodium carboxymethylcellulose, having one sodium carboxymethyl group per glucose unit, has been investigated as an antacid for the therapy of hyperacidity and peptic ulcer. Studies on normal subjects, on patients, *in vitro* studies assays on gastrostomy dogs, and on dogs with histamine beeswax ulcer, were performed. Accessory studies were done on guinea pigs and rats. The results indicate that sodium carboxymethylcellulose is an efficient neutralizer of gastric acidity, that it protects dogs against histamine beeswax ulcer, and that it does not constipate but acts as a bulk laxative. It functions chiefly as a nonsystemic buffer in neutralizing gastric secretions. It has the property to stick to the gastric and duodenal mucosa and form a viscid, protective coating. It retains antacids like carbonates or magnesium oxide and spasmodolytic drugs for prolonged periods of time in contact with the gastric and duodenal mucosa, and makes these adjuvants more effective than if they were given alone. A similar preparation has become available under the name of *carmethose*. 4 figures. 3 tables.—Author's abstract.

Chemotherapy in Chronic Ulcerative Colitis. HOMER C. MARSHALL, JOSEPH B. KIRSNER, AND WALTER LINCOLN PALMER, Chicago, Ill. M. Clin. North America 35:257-66, Jan. 1951.

This paper attempts to evaluate chemotherapeutic agents as used in chronic ulcerative colitis. Evaluation is difficult because of lack of knowledge of the etiology and the variable and unpredictable course of the disease. It is impossible to use a single therapeutic agent. Adequate controls are most difficult to obtain.

A fecal bacterial flora resistant to sulfonamides, penicillin, streptomycin, aureomycin, and chloromycetin develops in patients with chronic ulcerative colitis after varying periods of continued administration of these drugs.

Average aerobic bacterial counts seemed to rise above control levels after varying lengths of time of oral administration of penicillin, streptomycin, aureomycin, and chloromycetin.

Prompt clinical remission of ulcerative colitis does not occur consistently on the administration of the chemotherapeutic agents discussed.

The bacteriologic studies suggest that chemotherapeutic agents should be reserved for the infectious complications of the disease and be limited in duration to prevent the development of a resistant fecal flora. 15 references. 6 figures.—Author's abstract.

In the past the opinion was held that persons with achlorhydria often show a greater tendency to diarrhea than those with acid gastric secretion. In 1896, Oppler and Einhorn published their theory on the s.c. gastrogenic diarrhea. This view was supported by Cannon's well known theory of the opening and closing of the pylorus according to the acidity of the gastric and duodenal content. According to this theory, the gastric emptying time in achlorhydria is more rapid than normal. In many textbooks this view still prevails.

Recent research has, however, taken a critical attitude toward the clinical significance of achlorhydria. Ley, McClure, and Bair, among others, have shown that the opening and closing of the pylorus are only slightly dependent on the acidity of the gastric and duodenal content. Nor have any disturbances been found with x-rays in achlorhydria with regard to the gastric motility (Garcia). Egan has, with x-rays, examined the intestinal motility and could not see any divergence in achlorhydria in comparison with persons with acid gastric secretion. Brummer has, in hospital cases, found that in 99 patients with insulin-proved achlorhydria 17 per cent have a tendency toward diarrhea, whereas the corresponding percentage in persons with acid gastric secretion was 14; so there hardly seems to be any difference. Among Eggelton's 100 patients with achlorhydria, only 11 had a tendency toward diarrhea.

Since recent research has raised the question whether patients with achlorhydria have a more general tendency to diarrhea than persons with acid gastric secretion, the present writer has studied the correlation between the intestinal transit time and the gastric secretion.

The writer's series consisted of patients from the medical department of the Provincial Hospital at Oulu. Thus 78 patients, who to all probability were not suffering from more serious diseases of the gastro-intestinal tract such as gastric carcinoma, peptic ulcer, or gallbladder disease, were given a Boas-Ewald test meal, and if no free hydrochloric acid was established, a histamine test was performed. After a subcutaneous injection of 1 mg. of histamine, a sample of gastric content was taken after 20 minutes and, if needed, after 40 and 60 minutes. There were 26 cases of histamine-proved achlorhydria. It may be mentioned that of these patients only 6 complained of mild gastric pain and the remaining 20 patients had no gastric symptoms.

The intestinal transit time was studied by giving the patients five 0.25 Gm. tablets of carbon and by following the appearance of the carbon color in the feces.

The cases with histamine-proved achlorhydria were studied as one group. The remaining 52 patients were also treated as one group, for, as Brummer and Ruikka have shown, no conclusion can be drawn from the results of the Boas-Ewald test as regards the gastric secretion in physiologic circumstances.

In the patients with achlorhydria the most rapid rate of progress of carbon through the intestines was six hours and the slowest 46 hours, the average being 19 hours and 45 minutes. In persons with acid gastric secretion the corresponding times were 5 hours, 50 hours, and 20 hours. The cases did not show any difference in intestinal transit time between persons with achlorhydria and persons with acid gastric secretion.

Effects of Terramycin on the Bacterial Flora of the Bowel in Man. JOSEPH M. DI CAPRIO, AND LOWELL A. RANTZ, San Francisco, Calif. Arch. Int. Med. 86:649-57, Nov. 1950.

Terramycin, both in the amphoteric form and as its salt, the hydrochloride, had a pronounced effect on the bacterial flora of the healthy and diseased bowel of man, which was evident after 36 to 48 hours of therapy on an oral dosage schedule of 3 Gm. daily. Its effectiveness as an antimicrobial agent in the preparation of patients for surgical measures on the bowel appeared unexcelled. 2 tables.—*Author's abstract.*

A Partial Characterization of Enterogastrone. R. L. DRYER, Indianapolis, Ind. Quart. Bull. Indiana Univ. M. Center 13:14-17, Jan. 1951.

The use of enterogastrone in the therapy of peptic ulcers has lead to equivocal results. While the low and variable hormonal activity of the preparation must be considered, a more important factor is the lack of information concerning the nature of the active agent.

Since rats subjected to pyloric ligation develop ulcers which respond to enterogastrone therapy, and since such animals are easier to maintain and study than the Mann-Williamson dog, all of the assay data presented herein are based on rat experiments. The stomach of each animal was removed at sacrifice. The total volume and acidity of the contents were measured, while the degree of mucosal damage was expressed in terms of an arbitrary scale. The enterogastrone concentrates were injected immediately following ligation of the pylorus; in all cases the animals were sacrificed from six to seven hours later. Each preparation was assayed in at least 15 animals with a corresponding group of controls.

The starting material for these studies was a concentrate prepared according to Greengard (I). This was further treated by adsorption on benzoic acid (II), by an iso-electric precipitation (III), and by differential solution in phenol and a mixture of butyl alcohols (IV). The bio-assays demonstrated that all four fractions distinctly reduced the incidence and severity of ulceration, without apparently affecting secretory rate in a parallel manner. Thus fraction IV, which gave a maximum protection against ulcers, actually leads to an increased rate of secretion. Each fraction was submitted to formol titration before and after hydrolysis. A marked increase was produced by the hydrolytic procedure, and fractions I and III gave almost identical values. The same fractions also produced nearly identical depression of secretory rate and had nearly identical total nitrogen concentrations. On the other hand, their total sulphur and phosphorus contents were rather different. On the basis of the sulphur and phosphorus determinations and electrophoretic mobilities, fractions I and IV could be grouped in the same way, but since the electrophoretic mobilities were uniformly low, this data may not be conclusive. Two dimensional paper chromatography of the hydrolyzed fractions demonstrated at least eight amino acids in each fraction but showed no significant differences. The Sakaguchi, Hopkins-Cole, and biuret tests all gave positive reactions with the four fractions. Benedict's and Molisch's tests were negative. Millon's test was negative only with fraction III.

These data indicate that apparently the substance producing the effect on secretion is not identical with the substance protecting against ulceration. The latter substance, from the nature of the fractionation procedures, ready diffusibility, and low electrophoretic mobility, is presumed to be nonprotein in nature, although it probably includes a peptide of moderate size in its structure. 36 figures. 5 tables.—*Author's abstract.*

Observations of Normal and Abnormal Human Intestinal Motor Function. E. LEONARD POSEY, Rochester, Minn. Am. J. M. Sc. 221:10-20, Jan. 1951.

Intestinal motor function is a complex form of activity made up of three basic components: tone, motility of various types, and the intersegmental relationships, including coordination and incoordination. Tone provides the general background upon which motility is superimposed; it is possible for excessive tone to inhibit motility markedly. A nomenclature, described by others, has been found to apply equally well to motility patterns obtained from the small and large intestine. The intestinal tract is composed of functional segments, smaller in the ileum than the colon, which usually behave independently of one another. This normal intersegmental incoordination is of prime importance in acting as a physiologic "brake" to prevent the too rapid aboral progression of intestinal contents. The intestine cannot transport its contents unless adjacent functional segments become coordinated to act together, in phase, as single motor units. Excessive intersegmental coordination has been recorded from both the colon and the ileum of patients with chronic ulcerative colitis. Excessive intersegmental incoordination produces cramping and discomfort.

It was not possible to confirm the "law of the intestine" completely; ascending and descending excitations from a point of stimulation were constantly observed in 6 patients. The gastrocolic reflex was not conclusively demonstrated in 3 patients. No alteration of motility patterns was observed during sleep. Conduction of motility was not observed to cross the transected bowel. A dissociation of activity between the small and large intestine was noted in 1 patient. The motility of defecation has been recorded and retrotransport has been described. Unused segments of the bowel are potentially capable of normal motility. 15 references. 5 figures. 2 tables.—*Author's abstract.*

Human Infection with the Virus of Vesicular Stomatitis. R. P. HANSON, A. F. RASMUSSEN, JR., C. A. BRANDLY, AND J. W. BROWN, Madison, Wis. J. Lab. & Clin. Med. 36:754-58, Nov. 1950.

Three cases of infection of human beings with the virus of vesicular stomatitis are described. Presumably, each had the exposure in the laboratory. In 2 instances, a biphasic febrile course occurred. The disease was accompanied by fever, severe general malaise, and muscle pain. Mild stomatitis was noted in 2 of 3 patients. One had suggestive evidence of pneumonitis during the height of the initial febrile period. Subsequently, an x-ray of the chest was clear. Recovery was prompt and uneventful except for a somewhat prolonged period of fatigability in convalescence.

V.S.V. was not isolated from the patients, but high neutralizing activity of the sera for V.S.V., New Jersey type, developed during the course of the disease in 2 individuals and was present to a similar degree after recovery in the third. This would support prior unverified observations that the virus of vesicular stomatitis is transmissible to man, and that infections of animals with this virus are of significance in the field of public health. 7 references. 1 figure.—*Author's abstract.*

The Effect of ACTH on Nonspecific Ulcerative Colitis. H. R. ROSSMILLER, Cleveland, Ohio. *Gastroenterology* 17:25-7, Jan. 1951.

ACTH and cortisone have been shown to be effective in the treatment of joint manifestations of rheumatoid arthritis. Because chronic ulcerative colitis may be associated with a rheumatoid-like arthritis, workers have been interested in the possible effect of these substances. ACTH was administered to 5 patients with acute toxic ulcerative colitis. There was reduction of temperature elevation in 4 of the 5. Diarrhea was unaffected in four. The 1 patient benefited was also receiving azopyrin. Proctoscopic examination showed improvement only in this patient receiving azopyrin concomitantly with ACTH. In the remainder ACTH therapy had no effect on the appearance of the rectal mucosa. While apparently of value in reducing the febrile reaction in acute toxic ulcerative colitis, it appears to have little effect on the diarrhea or appearance of rectal mucosa. 5 references. 1 chart.—*Author's abstract.*

Infective Hepatitis. R. O. C. PRIBAM, New York, N. Y. *Rev. Gastroenterol.* 18:37-60, Jan. 1951.

In discussing the clinical signs and their evaluation, the authors stress the following observation: While there is a certain "team spirit" within one epidemic in the way that the patients show similar clinical symptomatology and prognosis, the difference between various epidemics may be striking in all respects. This difference is probably due to the variation of the infecting virus strains. Based on observations in different epidemics, the following clinical classification is presented: 1. *The Benign Form.*—The general condition of the patient improves rapidly; jaundice subsides within two to three weeks; the patient recovers quickly, and there is no mortality. 2. *The Vascular Form.*—The vascular framework of the liver suffers early damage, and within a few weeks symptoms of a vascular cirrhosis with signs of portal hypertension, varicosities, hemorrhagic tendencies, and ascites may develop. These lesions, however, are not irreversible and may heal completely. The mortality rate in this variety of hepatitis ranges from 5 to 10 per cent. 3. *The Neurocerebral Form.*—In this form there are early symptoms of damage to the central nervous system. The disease may run the course of an acute atrophy of the liver with a mortality rate as high as 40 to 60 per cent. 4. *The Gastro-Intestinal Form.*—From the very onset the course in this variety is monophasic and more like that of gastro-intestinal intoxication. Pancreatic syndromes may prevail during the entire course of the disease. The duodenum very often shows a marked pathology, spastic conditions at the onset and atonia, and paralysis at the later stage, as proved by serial roentgen examinations.

Pribram's theory of the etiology of hepatjaundice, as due to an intracellular block with paralysis of the whole chlokinetic system, is discussed and verified by records of successful surgery in desperate cases of hepatitis on the verge of turning into acute atrophy and hepatic coma.

The problem of the so-called second factor is discussed and the importance of a fertilizer or sensitizer stressed, which in causing primary damage to the liver paves the way for the development of a hepatitis. Such fertilizers are: alcohol, syphilis, and antisyphilitic treatment with heavy metals, malaria infection, large scale and accumulated vaccinations, hyperproteinemia, pregnancy, fatty food, misuse of sulfamides; psychosomatic factors also may have some bearing. The effect of alcohol misuse on epidemic hepatitis could be well studied during the last war. The following facts were established: 1. Alcohol-excess may cause a relapse a considerable time after complete clinical recovery. 2. Alcohol may shorten the incubation period from the usual time of 20-23 days to 3-5 days. 3. Alcohol may provoke an attack of acute hepatitis in a virus carrier. Relapses with a new outlook of jaundice following alcohol excess were observed as late as two to three months after complete clinical recovery. 44 references, 1 table.—*Author's abstract.*

Liver Biopsy: Correlation with Clinical and Biochemical Observations. JOHN H. MOYER, Houston, Texas. Am. J. M. Sc. 221:28-37, Jan. 1951.

The results of liver biopsies performed on 16 control subjects and a heterogeneous group of patients with clinical evidence of parenchymatous liver disease was reported. An attempt was made to evaluate the biopsy procedure and correlate the histopathologic findings with the clinical and biochemical observations.

Approximately 70 per cent of patients clinically diagnosed as having portal cirrhosis showed histopathologic evidence of unequivocal portal cirrhosis and the remaining 30 per cent showed only fatty metamorphosis. Of the liver function tests employed, the bromsulfalein test showed the most consistent correlation with the histopathologic findings. Patients with fatty metamorphosis only had little disturbance of the flocculation tests (thymol turbidity and cephalin flocculation), whereas in the presence of frank cirrhosis these tests were abnormal in three-fourths the patients. There seemed to be a rough correlation between the extent of hepatic pathology and the extent of abnormality of these tests. Glucose tolerance was decreased in most patients with cirrhosis, but there seemed to be poor correlation between the extent of hepatic damage (except near terminal cases) and the degree of altered glucose tolerance. In acute hepatitis, no histopathologic or biochemical characteristics were noted despite differences in etiology.

In a group of 10 patients clinically diagnosed as having chronic, recurrent hepatitis, 4 showed substantiating histopathologic findings, 1 of whom showed no abnormal liver function studies. Half of the patients with normal biopsies revealed disturbances of liver function studies, particularly noted in the thymol turbidity test. This test appears to be most sensitive and the last to revert to normal during convalescence. Periportal fibrosis as a sequel to chronic recurrent hepatitis was observed. However, there was insufficient evidence to lead to the conclusion that this pathologic state progresses to

advanced portal cirrhosis. A history of jaundice in the patient with cirrhosis does not warrant the assumption that infectious hepatitis has been the forerunner of cirrhosis.

Congestive hepatomegaly may show the same types of disturbance in liver function that are seen in portal cirrhosis, the degree of abnormality usually paralleling the degree of cardiac failure and the extent of hepatic congestion.

Sarcoidosis frequently exhibits typical hepatic lesions, particularly following any recrudescence of symptoms. The liver biopsy may be of considerable aid in reaching a diagnosis in the absence of peripheral lymph node involvement.

In a group of 16 control subjects, 15 had normal liver function studies and normal biopsies. The sixteenth showed evidence of minimal cholangiolitis in the absence of a past history of jaundice or biliary disease and in the presence of normal liver function studies. This finding raises the question of the pathologic significance of minimal changes suggesting cholangiolitis in the biopsy specimen.

It is concluded that, when patients are properly selected and the operator properly trained, the biopsy procedure is, for practical purposes, without complications. Any bleeding tendencies are definite contraindications, whether they be due to abnormalities of the blood or such associated diseases as cardiac failure and uremia which may increase the bleeding tendencies. The liver biopsy is invaluable in many diagnostic problems, particularly parenchymatous liver disease. Much information remains to be obtained with this procedure in the elucidation of pathogenesis of various liver disorders and the effect of therapy in these derangements. 35 references. 3 tables.—*Author's abstract.*

Studies of Liver Function Tests. II. Derivation of a Correction Allowing Use of the Bromsulfalein Test in Jaundiced Patients. LESLIE ZIEVE, Minneapolis, Minn. *J. Lab. & Clin. Med.* 37:40-51, Jan. 1951.

The relationship of bromsulfalein retention and blood bilirubin concentration has been studied in detail, based on a correlation plot of test results in 94 consecutive patients with liver disease or extrahepatic obstructive jaundice. The 1.0 mg. per cent level of the one minute bilirubin divides the scattergraph into two regions. Below this point there is no significant association of bromsulfalein and one minute bilirubin; above this point the two variables are significantly correlated, the coefficient of correlation between the bromsulfalein and log one minute bilirubin being 0.59. The bromsulfalein and total bilirubin are similarly related, 2.0 mg. per cent being the level dividing the graph into two corresponding regions. Below the one minute bilirubin level of 1.0 mg. per cent or total bilirubin level of 2.0 mg. per cent the bromsulfalein test may be interpreted directly as in nonjaundiced patients. From the regression equation relating the bromsulfalein to the one minute bilirubin in the region of significant association an average correction was derived which allows one to calculate the bromsulfalein value that would have been obtained had significant jaundice not been present. A table and a nomograph which facilitate this adjustment are included. The validity of the correction is discussed. 4 references. 5 figures. 3 tables.—*Author's abstract.*

GENITOURINARY DISORDERS AND DISEASES

Absence of the Vasa as a Cause of Azoospermia. KENNETH WALKER, AND REYNOLD BOYD, London, England. Brit. M. J. No. 4696:6-7, Jan. 1951.

It is reported that the treatment of azoospermia due to a blockage in the system of efferent ducts by which spermatozoa reach the posterior urethra is unsatisfactory. Nor is it always easy to locate the situation of the blockage, as catheterization of the ejaculatory ducts is often anatomically impossible. Some urologists have advocated exposure of the vasa and the injection of a fluid, not only as a diagnostic measure, but also as a means of clearing the obstruction, just as insufflation is used in the female as a means of opening up the tubes. They have never known this measure to succeed in their own practice.

The main purpose of this paper is to call attention to an abnormal condition of the vasa which was found in 6 or 7 cases while attempting to carry out a vaso-epididymostomy for a blockage in the epididymis. In some of these cases the vasa have been completely absent; in others, they have existed only as tortuous, friable, and solid structures, from which a creamy drop of fluid has exuded on incision. The vasa appeared to have undergone some form of coagulative or fatty necrosis. The question arises whether complete absence of the vasa was a congenital abnormality or the final stages of a degenerative process. A perusal of the literature of the anatomy and embryology of this structure suggests that congenital absence is exceedingly rare. This favors the second alternative, but in these cases the patients' past history did not reveal anything which would throw light on the nature of the pathologic condition responsible for the degeneration or disappearance of the vasa. The practical lesson to be drawn from the above is that every effort should be made to palpate the whole course of the vasa up to its junction with the epididymis before a patient is subjected to vaso-epididymostomy. If the vasa had been palpated more carefully in all of the authors' cases, some of the patients might possibly have been saved from an unnecessary anesthetic and scrotal incision. The authors also report 2 cases in which the epididymal canal would appear to have undergone a somewhat similar degenerative process. 1 figure.—*Author's abstract.*

Urinary Acetone—Its Detection and Value in Treating Ambulatory Diabetics. BURTIS J. MEARS, St. Paul, Minn. Minnesota Med. 34:35-6, Jan. 1951.

In diabetes mellitus, the body cannot adequately use its carbohydrates. As an alternative, fats must be used and are broken down to the ketone bodies faster than the muscles can utilize them. This increase in ketone bodies is the initial step in the production of diabetic acidosis and can be detected early by the presence of increased amounts of ketone bodies in the urine, namely acetone and diacetic acid. The Rothera test for acetone is a simple but delicate procedure which should be done whenever sugar is found in the urine or when acidosis is suspected. When the test is positive in any amounts over a trace, vigorous treatment should be instituted to prevent coma.

The causes of acidosis are: insufficient insulin, infection, trauma, hyperthyroidism, and pregnancy. The home or ambulatory treatment of acidosis consists of antibodies when indicated, adequate fluids, sufficient insulin (the dosage being governed by frequent urinalysis), and enough carbohydrates to prevent hypoglycemia with the increased doses of insulin. 6 references.—*Author's abstract.*

Hematuria. J. C. NEGLEY, Glendale, Calif. Ann. West. Med. & Surg. 5:45-46, Jan. 1951.

Hematuria is the most important symptom in the pathology of the genito-urinary tract. Objective symptoms and macroscopic or microscopic appearance of the urine, if used for diagnosis and treatment, are an invitation to malpractice suits. Indifference on the part of the patient, and more rarely of his attending physician, leads to some avoidable deaths and in those patients who survive for a time, suffering and needless expense. Most appropriate time for reference to a urologist is at the time of bleeding. Most of the diagnostic failures are in the intervals between bleedings. Modern methods of diagnosis are becoming more exact, and are readily available to any physician who may care to use them. Essential or idiopathic hematuria is a misnomer and only means that we are seeking an alibi for diagnostic failure.

In 844 cases of hematuria there were 169 (20 per cent) total deaths. Twelve per cent, or 21, of the deaths were avoidable. 4 references.

CARDIOVASCULAR DISORDERS AND DISEASES

The Appraisal of Cardiovascular Status in Infancy by Physical Examination. F. MASON SONES, JR., AND R. E. SCHNECKLOTH. Cleveland Clin. Quart. 18:17-22, Jan. 1951.

The early recognition of cardiovascular malformations offers the best opportunity for lowering the mortality and morbidity caused by these defects in infancy. This is primarily the responsibility of the physician entrusted with the routine examination and care of newborn infants. In this age group it is possible to recognize the presence of a cardiovascular anomaly and to make an estimate of its functional severity on the basis of symptoms and physical findings. The usefulness and limitations of the signs and symptoms most frequently encountered have been presented. Their recognition and evaluation provide the best foundation for medical management, intelligent use of more complex diagnostic methods, and the timely utilization of appropriate surgical technics. 3 references.

Mercurial Diuretics in the Treatment of Congestive Heart Failure. ABNER B. RISER, Birmingham, Ala. Am. Pract. 2:15-19, Jan. 1951.

Congestive heart failure was effectively managed in 125 patients with various forms of heart disease in a medical outpatient clinic by use of frequent intramuscular injections of a mercurial diuretic, often on a semiweekly basis and supplemented by use of oral and rectal preparations of the same mercurial preparation. The necessity for frequent hospital admissions consequently was markedly reduced. No serious toxic reactions were encountered. 23 references. 3 figures.—*Author's abstract.*

Rubellin—A New Digitalis-Like Drug for Heart Disease. Some Experimental and Clinical Experiences with Its Use. BARNETT ISAACSON, Cape Town, South Africa. South African M. J. 24:901-12, Oct. 28, 1950.

Rubellin, a glycoside newly isolated by Louw of Onderstepoort, Transvaal, was obtained from *Urginea rubella*, a member of the natural order *Liliaceae*. Sapeika has shown pharmacologically that rubellin has a digitalis-like action. Barnett Isaacson confirmed this clinically by experiments on cats and humans. Therapeutic doses on the cat produced a decrease of the cardiac rate without significant changes in the configuration of the complexes in the electrocardiogram; while toxic doses produced impure auricular flutter, ventricular paroxysmal tachycardia, and widening of the QRS complex. In man, the effective dose was 0.003 mg. per Kg. of body weight intravenously. Isaacson found it effective in patients with heart disease, with either normal or abnormal rhythm, acting best in cases of auricular fibrillation and congestive failure.

In its speed of action it was found to approach strophanthin and digoxin, and its effect on the electrocardiogram resembled digitalis. Intravenously, it was found capable of producing full action within two hours; digitalis may be given by mouth because rubellin has a quick action which lasts until the oral digitalis begins to take effect.

On treating 14 patients, a reduction of the heart rate was produced in 12; a prolongation of the P-R interval in 3 cases; no appreciable changes in the QRS complex, depression of the ST segments in 8 cases; and inversion of the T where T was originally upright and restoration to the upright where T was originally inverted in 1 case.

Extrasystoles were noted in 3 cases, the Wenckebach phenomenon in 2, and auricular fibrillation in 1 case when toxic doses were used. There was a decrease in venous pressure in 6 cases of congestive heart failure, loss of weight in 5, with reduction in size of the heart noted radiologically in 1.

The toxic effects were not greater than those of digitalis. Rubellin would appear to be of value in cases of vomiting and unconsciousness and where immediate treatment of congestive cardiac failure is imperative, provided it is certain that no other digitalis body has been taken within the preceding 10 days. 11 references.—*Author's abstract.*

The Effect of Cortisone Upon the Experimental Cardiovascular and Renal Lesions Produced by Anaphylactic Hypersensitivity. ARNOLD RICH, M. BERTHRONG, AND IVAN BENNETT, JR., Baltimore, Md. Bull. Johns Hopkins Hosp. 87:549-64, Dec. 1950.

Forty rabbits were sensitized with horse serum in the manner known to favor the development of periarteritis nodosa, cardiac inflammatory lesions, and acute glomerulonephritis. Half were treated with cortisone, the remainder serving as controls. Well marked vascular or cardiac lesions or both developed in 17 of the 20 control animals, and in only 4 of the 20 cortisone-treated animals. This conforms with our previous observations on the inhibitory effect of ACTH on the development of cardiovascular lesions of hypersensitivity.

Sensitization by the procedure used in these experiments produced acute diffuse glomerulonephritis with the cellular proliferation of the glomerular tufts that is characteristic of most cases of human acute glomerulonephritis. Both cortisone and ACTH inhibited the development of this proliferative glomerular lesion, but whereas effective treatment with ACTH maintained the glomeruli in a normal state, treatment with cortisone induced the development of a quite different type of severe glomerular damage with accentuated hemorrhage, which has its counterpart in some cases of human acute hemorrhagic glomerulonephritis. In many of the cortisone-treated animals there was massive deposition of glycogen in the liver, fat droplets in the liver cells, lipemia, and conspicuous extramedullary blood formation in the spleen. 9 references. 4 figures.—*Author's abstract.*

Cardiac Catheterization in the Diagnosis of Congenital Heart Disease. J. A. BOONE, Charleston, S. C. *J. South Carolina M. A.* 47:50-52, Feb. 1951.

The history of the development of cardiac catheterization as a diagnostic procedure in congenital heart disease is reviewed and the method used in the author's laboratory is described. Several illustrative cases are presented.—*Author's abstract.*

Congenital Heart Disease. I. Clinical Considerations. DANIEL F. DOWNING, Newark, N. J. *J. M. Soc. New Jersey,* 48:8-11, Jan. 1951.

Proper evaluation of an individual with congenital heart disease often depends on specialized diagnostic procedures, such as angiography and cardiac catheterization. However, the physician who first sees the patient should be sufficiently acquainted with the various entities to make an exclusion diagnosis at least. The usual clinical and roentgen features of many of the more common congenital cardiac anomalies are discussed briefly. The anatomic diagnosis of the lesion should be made as early in life as possible. If the condition is found to be operable, an emergency surgical procedure can then be carried out at any time the infant's condition makes it necessary.—*Author's abstract.*

The Prophylaxis of Subacute Bacterial Endocarditis. A. CARLTON ERNSTENE, C. J. McGARNEY, AND JEROME A. ECKER, *Cleveland Clin. Quart.* 18:1-5, Jan. 1951.

The portal of entry of the infecting organism and the event which made the portal available were identified with reasonable certainty in 32 of 111 consecutive cases of subacute bacterial endocarditis. In 13 patients dental extractions had preceded the onset of the illness, and in 9 others there had been an earlier acute infection of the upper respiratory tract. The disease followed abortion in 3 instances and began during the first week postpartum in one. Three cases occurred after trauma to the skin or scalp with secondary infection, and in 1 patient bilateral purulent otitis media immediately preceded the onset of symptoms. One case began after tonsillectomy and another after cholecystectomy.

In view of these findings it is recommended that all patients who have valvular heart disease or a congenital cardiac anomaly be given procaine penicillin G in water

or oil by intramuscular injection (1) before, and for five days after, dental extractions or tonsillectomy, (2) during acute infections of the upper respiratory tract for a minimum of five days and longer if fever persists, (3) before spontaneous or therapeutic abortion and spontaneous or induced labor and for the following five days (longer if fever is present), and (4) in the presence of infected wounds for a minimum of five days or until all evidence of local infection has cleared. Further studies may identify additional situations in which preventive treatment should be employed. Other antibiotic preparations may also prove to be effective prophylactic agents.

The difficulty of determining the efficacy of a program for preventing bacterial endocarditis has been emphasized. Instances of failure to protect against the disease will point the way to more effective procedures. A central registry to which such cases might be reported would hasten progress.

It is important that patients be informed of the presence of valvular heart disease or a congenital cardiac anomaly and of the indications for prophylactic measures against subacute bacterial endocarditis. 2 references. 2 tables.

Mechanism and Management of Myocardial Insufficiency. GEORGE R. HERRMANN, Galveston, Texas. *State J. Med.* 47:19-24, Jan. 1951.

Edema of the lungs, of the liver, and especially of the subcutaneous and interstitial tissue is the most disturbing complication of heart disease. Its removal is the most pressing problem in the management of patients with myocardial failure. The mechanism of edema has been attributed to disturbances in the normal relation of the hydrostatic and colloid osmotic pressure of the capillaries and tissue spaces. An additional endocrine renal factor has come to be recognized which, in some cases, seems to be the most significant from the quantitative standpoint.

The traditional concept of backward congestive failure has been questioned. Under certain circumstances congestive heart failure occurs with a cardiac output increased above normal. Warren and Stead demonstrated that the feeding of salt and withholding of diuretics in patients, after their use had produced a "dry weight," resulted first in an increase in weight followed by a rise in venous pressure. Reichsmann and Grant, however, found that withholding digitalis from patients with atrial fibrillation produced a rise in venous pressure before any gain in weight or edema.

Merrill emphasized the importance of sodium and water retention in the mechanism of high output failure in which minute volume is reduced relatively, with blood supply to the kidneys low, as the result of demands by other tissues. It has been shown that the kidney of congestive failure is unable to excrete sodium normally. In addition to decreased glomerular filtration rate, sodium retention also is due to increased reabsorption of sodium in the renal tubules. Increases in antidiuretic hormones and adrenal cortical hormones may occur as a result of the inadequate circulation to the pituitary or adrenal gland.

Although the role of the heart may have been overly minimized in recent discussions, the re-evaluation of the importance of the extracardiac factors of congestive failure has placed therapy on a sounder footing and made it more effective. Therapy directed at dissipation of edema by the kidneys is becoming more emphasized.

To restore compensation in the failing circulation, it is desirable to increase cardiac output and to decrease tissue needs. Rest, by lessening activity, decreases demands on the cardiovascular system. Digitalis increases the efficiency of the myocardium. A low sodium diet providing 200 mg. of sodium daily with sodium-free water as desired seems rational. Mercurial diuretics act by depressing tubular reabsorption of sodium and water while xanthines increase glomerular filtration and may alter tubular reabsorption. Too rapid and excessive diuresis by the mercurials may lead to sodium depletion.

Experimental studies by the author and his associates confirm the work of others that intravenous administration of digitalis (in full digitalizing doses) or aminophylline (in doses of 500 mg.) results in immediate lowering of the venous pressure. Following the injection of mercurials, venous pressure falls slowly after diuresis is well underway. All diuretics and digitalis increase excretion of sodium. Aminophylline and mercurials cause an early rise in sodium excretion, but mercurials produce a much more prolonged and pronounced effect. Digitalis causes a slower but persistent rise in sodium excretion. 21 references. 2 figures. 1 table.—*Author's abstract.*

Diagnosis of Heart Disease. Conventional Roentgen Examination. A. G. BARSH, Lubbock, Texas. Texas State J. Med. 47:9-14, Jan. 1951.

Most cardiac lesions can be suspected, if not diagnosed accurately, in the conventional roentgen examination. These findings must be correlated with the clinical findings, and then a relatively small number require the expensive time-consuming specialized procedures for an accurate diagnosis. Consideration must be given to variations in build and stature as well as pleuropulmonary diseases as causes for changes in the heart and great vessels. Cardiac enlargement may be a manifestation of a chronic degenerative disease, metabolic disease, or severe anemia. Enlargement of a single heart chamber is very uncommon, but, from the roentgen point of view, certain basic changes are rather characteristic for the various chambers. A composite of these findings usually are necessary in the average case of cardiac enlargement.

In the discussion of congenital heart disease, it is the purpose to give most consideration to those conditions which have become amenable to the more recent developments of surgery. It is estimated that 80 per cent of these cases can be diagnosed accurately by an astute clinician with the assistance of the conventional roentgen-ray examination.

In infancy the heart may show a globular enlargement. This is of little value for a specific diagnosis. It is also noteworthy that major anomalies may be present without any significant roentgen change. From a practical viewpoint about 70 per cent of the cyanotic group which survive beyond two years fall in the class of tetralogy of Fallot. It has been demonstrated that about 20 per cent of a group of cases showed no roentgen abnormalities except right ventricular enlargement in oblique projections in the presence of tetralogy of Fallot.

It is important to differentiate Eisenmenger's complex since it is not amenable to surgery. Patent ductus arteriosus can be suspected or confirmed by the roentgen examination. Coarctation of the aorta can be identified roentgenologically. Septal

defects must be considered because there are some which have become amenable to surgery. The reproduction of chest films of 9 different patients represent cases of mitral stenosis, aortic stenosis, tetralogy of Fallot, coarctation of the aorta, septal defects, and a cirsoid aneurysm of the superior vena cava. 7 references. 9 figures.—*Author's abstract.*

Antenatal Thrombophlebitis. A Case Report. W. BEDE MITCHELL, Detroit, Mich. Grace Hosp. Bull. 29:69-70, Jan. 1951.

An additional case of antenatal thrombophlebitis, occurring in the last week of gestation, is reported. Treatment was supportive, and subsequent parturition was uncomplicated. 2 references.—*Author's abstract.*

Suppurative Thrombophlebitis Treated with Aureomycin. D. M. JACKSON, Birmingham, England. Brit. M. J. 72-73, Jan. 1951.

A case of iliofemoral thrombophlebitis was reported in a boy who was suffering from severe scalds. It was thought to be of particular interest for three reasons: (1) The organism was a penicillin-resistant *Staphylococcus aureus*. (2) The initial chemotherapy appeared to have been discontinued too early. (3) A successful recovery was obtained with aureomycin without vein ligation proximal to the thrombus.

The detailed case report followed, describing the origin of the infection from a transfusion incision at the ankle. The diagnosis was confirmed at an operation to tie the great saphenous vein at its proximal end, but the iliac vein was not tied proximal to the thrombus. After two recurrences of pyrexia, presumed to be due to exacerbations of thrombophlebitis, a 28 day course of aureomycin was given (14,000 mg.), which was followed by recovery. The *S. aureus* was sensitive to aureomycin, and blood cultures throughout the illness were negative. Anticoagulant therapy was contraindicated by the burn. The treatment of suppurative thrombophlebitis was discussed briefly. It was suggested that the chief indication for vein ligation was inability to control the bacteremia with antibiotics. 11 references.—*Author's abstract.*

Studies on the Effects of Parenteral Quinidine Administration. HARRIS BLINDER, JULIUS BURSTEIN, WILLIAM HOROWITZ, EUGENE GERSH, AND ROANAN SMELIN, New York, N. Y. Arch. Int. Med. 86:917-33, Dec. 1950.

Quinidine lactate (0.65 Gm.) administered in several minutes intravenously produces a maximal cardiac effect within 15 minutes, as determined by changes in QTc. The magnitude of effect is greater than that attained with identical doses administered orally or intramuscularly. However, the toxic effects of quinidine lactate given intravenously make its therapeutic use hazardous.

Pseudo ventricular tachycardia occurred in 2 subjects with auricular flutter following the intravenous administration of 0.65 Gm. of quinidine lactate.

Quinidine lactate (0.65 Gm.) administered intramuscularly is no more toxic than quinidine given orally in similar doses. A maximal cardiac effect in subjects with

regular sinus rhythm (normal and abnormal hearts) is attained in about 30 minutes. The duration of peak effect is between two and four hours in subjects with normal hearts and at least six hours in those with abnormal hearts. At 24 hours a small but significant quinidine effect persists.

Of 22 subjects with cardiac arrhythmias 15 were restored to regular sinus rhythm by single or multiple parenteral doses of quinidine, although our efforts were not primarily directed toward treatment of the arrhythmias. The maximal effect, as estimated by slowing of the ectopic pacemaker, occurs between 30 and 60 minutes following the intramuscular administration of quinidine lactate.

Our observations suggest the following time schedule for intramuscular administration of quinidine: When rapid therapeutic effect is important, hourly administration is indicated; when necessity for speed in therapeutic response is less urgent, administration should be at intervals of three to four hours. 15 references. 3 figures. 3 tables.—*Author's abstract.*

Quantitative Studies of Electrical Conductivity of the Peripheral Body Segments.

JAN NYBOER, MARIAN M. KREIDER, AND LEONARD HANNAPEL, Hanover, New Hampshire. Ann. West. Med. & Surg. 5:11-20, Jan. 1951.

Electrical impedance plethysmography depends on the concept that the changes in blood volume within a given body segment, such as the leg, are measurable by changes in electrical conductivity to an alternating current.

The volume of electrolyte solution within a fixed distance of an expansile cylinder, such as an artery, appears to be a direct and linear function of the electrical conductivity. Electrically one may account for the variations in pulse volume by considering its effect as that of a variable parallel shunt to the surrounding tissues. The parallel impedance in ohms of this blood shunt (R_b) due to the segmental pulse may be calculated from the empirical equation, $R_b = R^{20}/\Delta R$ in which R_0 represents the impedance of the segment before its radial expansion, and ΔR twice the mean change in impedance over the cycle. The index of the volume of the pulse is then calculated from the empirical equation for the volume of a conductor $V = P l^2/R_b$ in which P represents the specific impedance of nonflowing blood and l the length of the segment being measured. The product of pulse volume and pulse rate expresses the pulse-volume index per minute.

A tentative concept of the peripheral pulse volume is outlined as a transient arterio-venous volume difference. The mean slope of the initial one half volume of the net difference during the cycle expresses the rate of excess input over output. The remainder of the cycle may be designated as the excess output interval.

Experimental evidence of the parallel nature of the pulse is submitted. The effect of posture and reactive hypervolemia on pulse volume is illustrated. A series of quantitative conductivity studies on a case of arteriosclerosis obliterans is reported before and after sympathetic block and sympathectomy. The significance of the conductivity changes associated with emptying and filling of the venous reservoir of a segment is outlined. It is compared with the minute pulse volume derived independently on the same segment. The practical advantages of the electrical impedance methods, if

valid, are apparent as a measure of segmental blood flow. Nevertheless, the information gained by the method may assist in study of alternation by physiologic, physical, and pharmacodynamic procedures and disease. 6 figures. 7 tables.—*Author's abstract.*

Electrocardiographic Patterns in Slight Coronary Attacks. CORNELIO PAPP, AND K. SHIRLEY SMITH, London, England. *Brit. Heart J.* 13:17-31, Jan. 1951.

Out of 109 consecutive cases diagnosed as cardiac infarction, comprising hospital inpatients, patients seen in consultant and in general practice, 33 (a little less than one-third) had slight coronary attacks. Shock and cardiac failure were not found in these 33, the blood pressure never fell to dangerous levels, clinical and laboratory signs of myocardial necrosis were slight or absent, and all the patients made uncomplicated recoveries. The ages of these patients varied between 42 and 73, 2 being over 70. The proportion of men to women was three to one.

Electrocardiograms recorded in 35 attacks (2 patients had two attacks and both slight) showed the following patterns of myocardial ischemia: anteroseptal 17, anterolateral 7, antero-apical 2, posterior 6, posterolateral 3. Changes in S-T and T patterns were prominent in all; diminution or absence of R was encountered in 3 and pathologic Q waves in 7 instances. Complete restoration to normal or far-reaching electrocardiographic recovery was almost the rule, resulting in 28 instances. Anteroseptal patterns showed the greatest rate of restoration, and 16 out of 17 became normal or nearly so, as did also, 5 out of 7 anterolateral and 5 out of 6 posterior patterns. Recovery took place within two months in 5 patients and from 4 to 16 months in the remaining 23. In 6 the electrocardiogram remained unchanged, and only one posterolateral pattern showed further extension of infarction.

These electrocardiographic patterns are suggestive of small intramural or patchy subepicardial infarctions and as such they are in close agreement with the slight clinical symptoms. The notable frequency of cardiographic restoration suggests good collateral circulation in the infarcted areas, stimulated perhaps by preexistent arterial narrowing (more than half of these patients had long-standing angina and two-thirds continued having it after the infarction). Anticoagulant treatment is not indicated since the risk of thromboembolic complications or extension of infarction is so slight. Further thrombosis in major coronary branches must remain an ever-existing danger. 12 references. 12 figures.—*Author's abstract.*

Electrocardiographic Patterns in Stokes-Adams Syndrome. BERNARD H. PASTOR, Philadelphia, Pa. *Ann. Int. Med.* 34:80-89, Jan. 1951.

The classic concept of Stokes-Adams syndrome is that of syncope, with or without convulsions, associated with ventricular asystole, in patients with complete A-V heart block. This usually has been considered to be due to transient ventricular asystole. Many individual observers undoubtedly have been aware that ventricular arrhythmias also could be responsible for the syncope of the Stokes-Adams attack. In 1941 Parkinson, Papp, and Evans emphasized the occurrence of ventricular standstill, ventricular tachycardia, ventricular fibrillation, or a combination of these mechanisms

during Stokes-Adams syncope in a study based on analysis of 56 cases in the literature and 8 cases of their own. Of the 64 cases, 13 showed combinations of ventricular arrhythmias and ventricular standstill; 13 showed ventricular tachycardia and ventricular fibrillation without standstill, and 33 showed ventricular standstill alone.

Most patients with Stokes-Adams syndrome have established complete heart block between attacks, although some may have partial heart block or occasionally a normal sinus rhythm with suddenly developing heart block. The problem in treating the individual attack is complicated by the variety of mechanisms. Adrenalin, considered by some the drug of choice, seems unwise in the presence of ventricular tachycardia; while quinidine, believed to be the drug of choice in ventricular tachycardia, tends to increase the degree of heart block and depress conduction. During attack an electrocardiogram is essential to the recognition of the mechanism responsible for the syncope. Patients who develop ventricular arrhythmias are believed by Schwartz and his co-workers to have a prefibrillary mechanism which consists of increase in the basic ventricular rate, premature beats (at first singly and then in groups), and finally, the appearance of short groups of fibrillary waves. These can be recognized clinically by the irregular pulse pauses but more accurately identified electrocardiographically.

Quinidine has been indicted by some workers because of a possible relationship to the development of ventricular extrasystolic rhythms. This tendency to initiate ventricular tachycardia generally is attributed to a re-entry phenomenon associated with the depressant action of quinidine on the myocardium. The response to quinidine is unpredictable because of its dual action: lengthening the refractory period which tends to interrupt arcus rhythm, and lowering the rate of conduction which tends to perpetuate it. The result depends on which action predominates. The value of quinidine in the prevention of ventricular arrhythmias has not been established, but it has been shown to be capable of producing such arrhythmias both experimentally and clinically. Barium chloride has been recommended but is probably ineffective. 26 references. 5 figures.—*Author's abstract.*

Q-Tc Interval of the Electrocardiogram in Acute Rheumatic Carditis in Children.

NATHANIEL H. SOLOMON, AND MORRIS ZIMMERMAN, New York, N. Y. Am. J. Dis. Child 81:52-8, Jan. 1951.

Twenty-five cases of acute rheumatic carditis and a similarly controlled series were studied clinically and electrocardiographically. The corrected QT interval was measured in all standard leads and at least one chest lead. The upper limit of normal for QTc was taken as 0.422.

In the 25 cases of rheumatic carditis in children the highest QTc was prolonged in 21 cases (84 per cent). It was beyond 0.405 in all cases. In the controlled group 2 cases (8 per cent) had QTc readings above 0.422. Both these children have inactive rheumatic carditis.

In 2 cases of acute rheumatic fever without demonstrable carditis the QTc was consistently below the upper limit of normal. It was our impression that as the carditis improved the QTc diminished towards normal. In 2 cases QTc remained elevated for three years under observation. Even the sedimentation rate remained normal in

one and slightly elevated in another. While an elevated QTc is not the sole diagnostic criterion of acute carditis, it is of great importance in diagnosis if it increases from a previously normal value. It is of further value in following a known case of rheumatic carditis since it tends to decrease as the carditis recedes. Changes in the QTc in active carditis are, in our experience, more frequently observed than the sum total of all other previously reported ECG abnormalities. Although the QTc is an excellent diagnostic aid, it still must be considered in conjunction with the clinical picture and other laboratory methods. 9 references. 1 table. 3 charts.—*Author's abstract.*

A Case of Periarteritis Nodosum Treated with Benadryl and Penicillin. N. SCHRAGER, Tel-Aviv, Israel. *Acta med. orient.* 9:293-98, Nov.-Dec. 1950.

After a short discussion about the pathologic, clinical, and etiologic aspects of periarteritis nodosa, the author presents a case which was clinically diagnosed as periarteritis nodosa and so confirmed by biopsy. The clinical picture was characterized by involvement, at one time or another, of the skin, kidneys, liver, heart, lungs, and gastrointestinal system. At first the kidney lesion was of the nephritic type and later changed to the nephrotic type, a feature, which to the author's knowledge, was not yet reported. The heart involvement consisted of myocardial and endocardial lesions, of which the myocardial ones were diagnosed by frequent electrocardiographic tracings. The patient was first treated by benadryl, later by penicillin—without effect. Only after the institution of a combined benadryl-penicillin treatment (50 mg. benadryl twice daily and 800,000 units penicillin daily) did the patient react favorably and recover. The recovery was slow, but all pathologic changes disappeared with the exception of a mitral insufficiency which persisted. Commenting on the case, the author stresses that the favorable reaction to the combined benadryl-penicillin treatment cannot be taken as an absolute proof for the efficiency of the treatment despite the fact that others in France (Bonnin et al) obtained the same results previously. On the other hand, if the theories of an allergic and streptococcal origin of periarteritis nodosa are accepted, then it is clear that both factors must be attacked at the same time. The case under discussion seems to confirm this approach. 8 references. 1 table.—*Author's abstract.*

Capillary Resistance and Adrenocortical Activity. H. N. ROBSON, AND J. J. DUTHIE, Edinburgh, Scotland. *Brit. M. J.* 2:971-77, Oct. 28, 1950.

The investigation described in this paper started with the observation that the resistance of skin capillaries to rupture by negative pressure rose sharply after many types of surgical operations. Giving full details of the method used, the authors describe the effects on capillary resistance of other types of tissue damage—including physical agents, x-ray irradiation, and mitotic poisons. A variety of such agents produced increased capillary resistance; it seemed possible that this rise was the result of nonspecific stress. The injection of adrenalin and the production of insulin hypoglycemia caused a marked increase in resistance. These observations, considered in the light of recent work which suggests that adrenalin stimulates the production of ACTH

from the anterior pituitary, led to the idea that this increased capillary resistance might be a manifestation of adrenocortical activity.

This idea was strongly supported by the study of the effects on capillary resistance of the injection of ACTH in a series of 12 cases. It was found that increased capillary resistance occurred in proportion to the degree of adrenocortical stimulation (as indicated by other measurables). A single dose of 25 mg. of ACTH generally produced a significant increase within four hours, while continued administration of 25 mg. every eight hours resulted in sustained elevation of resistance. When ACTH was stopped, the resistance fell at varying speeds, reaching base levels again in 10 to 14 days.

An interesting development from these findings was the result of the administration of ACTH to cases of thrombocytopenic purpura in which capillary resistance is usually low. Two cases are reported. Marked increase in capillary resistance, accompanied by definite clinical remission, occurred in both cases. This is the first report of the effects of ACTH in this condition, and further study is indicated.

The authors conclude that it is likely that the increase in capillary resistance found to follow the administration of ACTH, adrenalin, and insulin is due to adrenocortical activity. Such activity would account also for the changes in resistance which follow tissue damage and bodily stress. They suggest that the measurement of capillary resistance provides a fairly simple and rapid method of following the response to ACTH or to substances which might be expected to have a similar effect. 22 references. 7 figures. 1 table.—*Author's abstract.*

Clinical Aspects of Cardiac Asthma and Acute Pulmonary Edema with Special Reference to Blood Pressure. INGER SONNE, AND TAGE HILDEN, Copenhagen, Denmark. *Acta med. Scandinav.* 138:354-61, 1950.

It is generally stated that cardiac asthma and acute pulmonary edema are associated with elevated blood pressure, although occasionally a lowered blood pressure is found. As a matter of fact, blood pressure readings have been reported only in a few cases.

In the present series the blood pressure compared with that taken the following day was increased during the attack in all cases of cardiac asthma (11 cases), whereas in acute pulmonary edema it increased in 16 cases, decreased in 5, and remained unchanged in one. With regard to the increased blood pressure during the attack, several factors have to be considered. It is a clinical experience that, on admission, blood pressure readings show higher figures than on the next day; an elevation of the systolic pressure of 20 mm.Hg is usually found. In the present series the average increase in cardiac asthma is 28 mm. and in acute pulmonary edema, 44 mm.Hg. Thus, the authors think some other factors have played a part. It must be considered whether or not anoxemia during the attack might cause an increase in blood pressure. A lowered arterial oxygen saturation, however, is not a constant finding in paroxysmal cardiac dyspnea. Perhaps the most plausible explanation is that the increase in blood pressure is due to some reflexes from the lungs brought about by the increase of the pulmonary congestion during the attack. The increased blood pressure means

an increased strain on the left ventricle, causing a still greater degree of pulmonary congestion, and, in this way, a vicious circle may develop. Only 1 out of 16 cases of cardiac asthma died, whereas 17 out of 42 cases of acute pulmonary edema died. In the latter condition the mortality rate during the attack seems to be related to the level of the blood pressure in that only 3 out of 17 cases with a systolic pressure of 190 mm.Hg or more died, whereas 14 out of 25 cases with a systolic pressure lower than 190 mm.Hg died. The relatively favorable prognosis of cardiac asthma and the high pressure cases of acute pulmonary edema is in conformity with the assumption that these cases constitute a disturbance rather than a failure of the circulation; an interruption of the pathologic vicious circle usually will relieve the attack. In the low pressure cases, either a primary or a secondary cardiac failure probably exists, the treatment consequently being much less effective. 6 references. 4 figures. 3 tables.—*Author's abstract.*

Intravenous Use of Quinidine, with Particular Reference to Ventricular Tachycardia.

A. HENRY CLEAGETT, JR., Wilmington, Del. Am. J. M. Sc. 220:381-88, Oct. 1950.

Since 1922, quinidine has been used with success in the treatment of ventricular tachycardia, and is considered at present to be a specific in this condition. Despite sporadic reports of severe reactions in patients to whom the drug has been given intravenously, there are cases in the literature in which the drug has been given with safety and in which a return to regular sinus rhythm has been effected. In a recent report of 31 cases in which the drug was used intravenously, 4 deaths were reported immediately following its use, and the authors attributed the deaths to the action of the drug. They stated, however, that these 4 patients were moribund at the time the drug was administered.

Quinidine lactate was supplied in 10 cc. ampules (each containing 0.65 Gm.) by Dr. Kenneth G. Kohlstaedt of Eli Lilly and Company of Indianapolis. In this series the drug was not administered directly by syringe but diluted to at least 50 cc. and allowed to enter the vein at a very slow rate of approximately 20 drops per minute. The patient was under constant observation of a physician during the entire course of administration, and while electrocardiographic tracings were not continuous in all cases, the patients were attached to the machine at all times, and frequent tracings were obtained. Wherever possible, a small dose was given by mouth prior to the intravenous administration to rule out drug sensitivity. In many cases, however, the critical condition of the patient did not permit this procedure.

The intravenous use of quinidine was considered to be indicated in the case of a critically ill patient whose cardiac mechanism was ventricular tachycardia in whom oral quinidine had been ineffective or whose condition was so serious that there was no time for delay. A further group of patients who received the drug by vein were those who were undergoing radical surgery of the thorax (usually esophagus or heart) who obviously were unable to take the drug by mouth during the operation. In all of these cases the drug was given orally prior to operation.

In the 13 patients treated the dose varied from 0.4 Gm. to 3.25 Gm. (This latter patient, to whom the drug was given because of ventricular tachycardia following

acute myocardial infarction, is living and well two years following this episode.) The smallest dose given to a patient with paroxysmal ventricular tachycardia which was followed by return to regular sinus rhythm was 0.8 Gm. Other than three instances of nausea and vomiting, which may well have been due to the disease rather than the medication, no other signs or symptoms even slightly suggestive of quinidine toxicity were seen in this series of over 40 intravenous doses. It seems highly probable that many of the severe reactions described in the literature were the result of (1) the disease, (2) impurities in, or too great a concentration of, the intravenous solution, or, most important, (3) its too rapid administration.

Although intramuscular administration is preferred by some, I prefer the intravenous route because, when properly administered (well diluted and given slowly under constant observation), it can be discontinued immediately on attainment of the desired therapeutic effect or the first sign of toxicity. Intramuscular administration, on the other hand, is not subject to such control.

Given properly, quinidine is relatively safe by the intravenous route and has been life-saving, particularly in patients developing ventricular tachycardia following myocardial infarction whose regular rhythm could not be re-established by oral quinidine or whose condition was so critical as to demand utmost support of action. 39 references. 2 figures. 1 table.—*Author's abstract.*

Effect of Cortisone on the Cardiogram. WALTER SOMERVILLE, Boston, Mass. *Brit. M. J.* 2:860-62, Oct. 14, 1950.

Cortisone was administered to 11 patients (3 males and 8 females) with chronic adrenal insufficiency. The drug was given by intramuscular injection or pellet implantation in doses of 163 to 850 mg. over 5 to 18 days. All patients had been treated previously by various forms of replacement therapy.

The cardiogram in 6 of the patients showed the abnormalities often encountered in chronic adrenal insufficiency—namely, abnormal T waves or prolonged PR or QT intervals. In the remaining 5 patients, the cardiograms were normal. After cortisone therapy, 4 of the 6 abnormal cardiograms improved, and 2 were unchanged. No effect was noted in the 5 normal cardiograms. The improvement was still present in 1 patient five months after the treatment was stopped. In 2 others, in whom cortisone pellets had been implanted, cardiographic improvement was maintained over a two month observation period. The cardiogram in 1 patient had partly regressed two months after cortisone was suspended. The way in which cortisone influences the cardiogram in chronic adrenal insufficiency is unknown. 8 references. 2 charts.

Coronary Infarction and Gout. ERIK ASK-UPMARK, AND LENNART ADNER. *Acta med. Scandinav.* 139: fasc. I, 1950.

Three cases of gout appearing in connection with myocardial infarction are described briefly. Attention is called to the importance of metabolic factors in the cardiac infarctions in general and to behavior of the eosinophil count in this condition. Investigations along this line are outlined.—*Author's abstract.*

RESPIRATORY DISORDERS AND DISEASES

Pulmonary Tuberculosis. The Results of Treatment at Baragwanath Non-European Hospital. L. FATTI, AND REGINALD CRAWSHAW, Johannesburg, South Africa. South African M. J. 24:1665-69, Dec. 23, 1950.

A study was made of the possibilities of treating pulmonary tuberculosis in the South African Native and Asiatic peoples since it has been widely stated that this disease is so fulminant among these people that treatment would be to little purpose. A consecutive series of 42 cases of pulmonary tuberculosis in non-European patients is reported, and a series of successfully treated patients is presented with case histories and photographs of chest x-rays. The problem was approached in the same manner as in the European. Treatment was successful in 73.9 per cent of the cases. A patient has only been considered a success if the sputum and fasting gastric juice have been negative for tubercle bacilli on direct and cultural examination, the Westergren sedimentation normal, the patient well and asymptomatic, and the x-ray of the lung fields satisfactory for at least six months. The results of treatment compare favorably with results in other parts of the world where the thoracic surgical team operates. In only 7 of the 42 cases (16.7 per cent) has thoracic surgery not been required. Success followed resection in 8 out of 9 cases submitted to this form of treatment. 2 references. 5 figures. 1 table.—*Author's abstract.*

The Relationship Between Tuberculin Reaction and Tuberculous Infection. SVEN NISSEN MEYER, Oslo, Norway. Pub. Health Rep. 66:1-15, Jan. 1951.

Pirquet tests were performed in about 53,000 individuals over 14 years of age not previously vaccinated, and the distribution by size of reaction was obtained in various age and sex groups. Below the age of 50 the distribution curves are bimodal with peaks at 0 mm. and 6-7 mm. induration, corresponding to two groups in the population: one noninfected and the other infected with TB. The first peak decreases, the second increases with increase of age from 15-29 to 40-49 years. A shift in the location of the second peak indicates that stronger reactions occur more frequently among infected males when age increases from 15-29 years to 30-39. This may be explained by repeated exposure to tuberculous infection. After the age of 50 years distribution curve is unimodal in males, indicating that most of them are infected. A shift of the whole distribution with increase of age from 50-59 to over 60 years indicates a loss of sensitivity among infected persons in old age. It is likely that most of the small reactions (of 1-3 mm. induration) belong to noninfected persons at a younger age than to infected persons at old age.

This is also substantiated by a study of the frequency of pulmonary calcification among individuals with reactions of (1) 0-1 mm. induration, (2) 2-3 mm. induration, (3) more than 3 mm. induration. At younger ages this frequency is much higher in the third group than in the first two, which are only slightly different. In old age the frequency of calcification is almost the same in all three groups, which suggests that most of these individuals with 0-3 mm. induration belong to the infected group. 5 references. 3 figures. 6 tables.—*Author's abstract.*

Primary Pneumococcal Pneumonia at the Cincinnati General Hospital, 1936-1950.
ROBERT T. THOMPSON, Cincinnati, Ohio. J. Lab. & Clin. Med. 37:73-87, Jan. 1951.

This study is a review of 3,205 patients with primary pneumococcal pneumonia who were admitted to the Cincinnati General Hospital in a period of 14 years, 1936-1950. Of these patients, 43.5 per cent were 13 to 39 years of age, 35.4 per cent were 40 to 59 years of age, and 21.0 per cent were 60 years of age or older. The number of cases per year decreased irregularly from 387 in 1936-37 to 100 in 1949-50.

Each new era of treatment produced a definite reduction of mortality. The mortality was 32.5 per cent during the three year era of serum treatment, 1936-37 through 1938-39; 16.9 per cent during the six year era of sulfonamide treatment, 1939-40 through 1944-45; 13.0 per cent during the two year era of sulfonamide and adjuvant penicillin treatment, 1945-46 and 1946-47; and 8.6 per cent during the three year era of penicillin treatment, 1947-48 through 1949-50. The mortality of the older patients was greater than that of the middle-aged or younger patients.

Observations of the predominating pneumococcus types revealed that Type III caused the greatest number of deaths in each of the first seven years of study (1936-37 through 1942-43) and, at the same time, caused the most cases of pneumonia in the older age group. In the last seven years (1943-44 through 1949-1950), Type III failed to lead as cause of deaths and led in only three years as cause of pneumonia in the aged. Type VII became the most virulent type in the three of 1943-44 through 1945-46. Type I and Type VII caused an equal number of deaths in 1943-44, and Type VII lead as cause of death in 1944-45 and 1945-46. Type VIII caused three deaths in 1946-47; and in the last three years, 1947-48 through 1949-50, no type was outstanding as a cause of death.

There was a yearly variation in the frequency of pneumococcus types. Type I was the most frequent pneumococcus in eight years; Type VII was most frequent in three years; Types I and VII were equally frequent one year; and Types II and III were most frequent one year each. White patients showed a consistently greater mortality rate than Negro patients, except for one year, 1939-40. However, this was due largely to the greater proportion of white patients in the older age group. Of the patients 60 years of age or older, 74.7 per cent were white, whereas only 48.9 per cent of the patients 13 to 59 years of age were white. The various modes of therapy, which were effective in reducing mortality, had no effect on the yearly frequency of pneumococcus bacteremia or purulent complications. Bacteremia occurred in 22.8 per cent, and purulent complications occurred in 7.1 per cent of the cases. 6 references, 9 tables.—*Author's abstract.*

Subclinical Mineral Oil Pneumonitis. LOUIS SCHNEIDER, M.D., Bronx, N. Y. New York State J. Med. 51:245-51, Jan. 15, 1951.

During the past three years this observer has encountered 17 cases of, for the most part, silent basal pulmonary lesions traceable to the repeated ingestion of mineral oil by the apparently well older adult. Two of these were private patients, and 2 others were seen on the wards of a small voluntary general hospital to which they were

admitted for an unrelated acute condition. It is not unreasonable to infer that other chest clinicians and radiologists must be seeing such cases too, although they may not be reported or not recognized in their true light. Under the circumstances, it may be time to take stock of the safety of the repeated use of mineral oil for laxative purposes, as we did regarding the wisdom of the use of this product in nose and throat medication over a decade ago.

Thus far, insidious harm to the lungs from the repeated ingestion of mineral oil by the ambulatory adult has been found predominantly in what may be termed the pre-geriatric age. This experience would indicate too that, next to having an alert clinician recognize the disease following its disclosure on the routine chest x-ray, the individual with lipid pneumonitis would be better off if the basal process were found bilateral rather than in one lung. This asymptomatic person may thus avoid losing a lobe or a lung or something more to an overzealous cancer-conscious chest surgeon who is on the lookout for early bronchogenic carcinoma. 9 figures.—*Author's abstract.*

The Prophylaxis and Treatment of Acute Respiratory Diseases with Antihistaminic Drugs. I. Prophylactic Treatment in Navy Male Recruits. THE PERSONNEL OF U. S. NAVAL MEDICAL RESEARCH UNIT NO. 4, BUREAU OF MEDICINE AND SURGERY, NAVY DEPT. Washington, D. C. J. Lab. & Clin. Med. 36:555-69, Oct. 1950.

Minor acute nonbacterial infections of the upper respiratory tract occur in epidemic patterns among new naval recruits. These are clinically and epidemiologically similar to the common cold as seen in civil populations. Thonzylamine hydrochloride was given in prophylactic dosage of 50 mg. twice daily to 352 Navy recruits throughout their training period of 11 weeks. There was no reduction in incidence or alteration in the clinical picture of colds in the group receiving the antihistamine when compared to a control group of 337 who received placebos and a second control group of 414 men who were untreated. 24 references, 3 tables.—*Author's abstract.*

The Prophylaxis and Treatment of Acute Respiratory Diseases with Antihistaminic Drugs. II. Prophylactic Treatment with Therapeutic Dosage in Navy Male Recruits. THE PERSONNEL OF U. S. NAVAL MEDICAL RESEARCH UNIT NO. 4, BUREAU OF MEDICINE AND SURGERY, NAVY DEPT. Washington, D. C. J. Lab. & Clin. Med. 36:570-75, Oct. 1950.

An acute upper respiratory infection clinically and epidemiologically similar to the common cold as observed in civil populations is epidemic in newly arrived Navy recruits. Thonzylamine hydrochloride in a dosage of 75 mg. three times daily was given to a group of 118 men; trimeton in a dosage of 30 mg. three times daily was given to a second group of 116 men; a third group of 123 men were given a placebo. Despite the use of therapeutic doses of the antihistamines prior to, and during the onset and course of, colds, there was no reduction in the incidence, severity, or duration of colds in the antihistamine-treated as compared to the control group. Abortion of colds was not observed despite the use of therapeutic doses for as long as 48 hours prior to the onset of symptoms. 14 references, 2 figures, 5 tables.—*Author's abstract.*

The Prophylaxis and Treatment of Acute Respiratory Diseases with Antihistaminic Drugs. III. Treatment of Minor Acute Respiratory Infection in Navy WAVE Recruits. THE PERSONNEL OF U. S. NAVY MEDICAL RESEARCH UNIT NO. 4, BUREAU OF MEDICINE AND SURGERY, NAVY DEPT. Washington, D. C. J. Lab. & Clin. Med. 35:576-83, Oct. 1950.

Wave recruits reporting illnesses clinically classifiable as the common cold were assigned in rotation to three treatment groups. The first received thonzylamine hydrochloride in a dosage of 25 mg. four times daily, the second atropine sulphate in a dosage of 0.25 mg. four times daily, and the third group received an inert placebo four times daily for 48 hours. Neither atropine nor antihistamine caused any alteration in the course or symptomatology of colds, despite treatment of some individuals within the first hour of symptoms. Both drugs exhibited vasomotor effects on the nasal mucosa early in the course of colds without changing symptoms. No relation was observed between eosinophils in the nasal smear, the duration of symptoms, a history of allergy, or the response to treatment. 17 references. 1 figure. 5 tables.—*Author's abstract.*

The Prophylaxis and Treatment of Acute Respiratory Diseases with Antihistaminic Drugs. IV. The Prophylaxis and Treatment of "Colds" in Volunteers. THE PERSONNEL OF U. S. NAVAL MEDICAL RESEARCH UNIT NO. 4, BUREAU OF MEDICINE AND SURGERY, NAVY DEPT. Washington, D. C. J. Lab. & Clin. Med. 36:584-90, Oct. 1950.

Several antihistaminic agents and placebos were issued in either prophylactic or therapeutic options to a group of Navy personnel and their families who had broad contacts with civil populations. Only 50 per cent of those issued the prophylactic and 25 per cent of those receiving the therapeutic option reported their results in the use of these drugs against colds. In those who reported, there was no evidence that the antihistamines prevented or aborted colds. Neither was there any evidence that the severity or duration of colds was altered by these drugs. Seventy-eight per cent of those receiving placebos reported they thought the treatment was superior to their usual methods of treating colds, indicating the psychologic effects of treating colds with drugs which the patient has been conditioned to believe highly effective. 4 references. 4 tables.—*Author's abstract.*

The Size and Nature of Dust Particles Found in Lung Tissue. THOMAS BEDFORD, AND C. G. WARNER, London, England. Brit. J. Indust. Med. 7:187-94, Oct. 1950.

This paper gives detailed size distributions of dust particles found in specimens of lung tissue from a shot-firer who had died from silicosis after many years' work in an anthracite mine. Size distributions are given separately for particles of coal and of minerals other than coal. Particles were examined in nodules and in reticulation areas. Of all the particles measured, 0.3 to 0.4 per cent were larger than 5 microns, and particles as large as 8 microns were found in both nodules and reticulation areas. As in the dust clouds in mine air, the larger particles were of coal. Of the noncoal particles 86 or 87 per cent were less than 0.8 micron in diameter.

The size distributions of the dust in the lung sections were similar in type to those of the air-borne dust after shot-firing at the colliery where the man had worked, although the proportion of very small particles was somewhat smaller in the lung sections than in the air-borne dust. It is shown that when allowance is made for the effects of particle size on alveolar retention, the observed size distributions of the air-borne dust are close to what would be expected to account for the size distributions of the dust particles found in the lung tissue.

In nodules and in reticulation areas the particle size distributions were very similar. Rough calculations of the effects of partial solution of the dust on particle-size distribution suggest that the similarity of the size distributions should not be taken to indicate that no solution occurs after particles are deposited in lung tissue. 6 references. 2 figures. 7 tables.—*Author's abstract.*

Occupational Factors in Pulmonary Dust Disease. GORDON SMITH, Sydney, Australia
Med. J. Australia 2:777-82, Nov. 1950.

The definition of pneumoconiosis adopted by the Third I. L. O. Conference of Experts on Pneumoconiosis, which was held in Sydney in 1950, is stated, and the broadening present day scope of the term *pneumoconiosis*, is discussed briefly. The need for a complete and accurate occupational history in the diagnosis of pulmonary dust disease is stressed. Important information concerning the potential capacity of a dusty environment to cause disease of the lungs can be obtained from a study of the composition and nature of the dust, the size of the dust particles, and the intensity of exposure. Crystalline-free silica is the most injurious component of an industrial dust, and, as a general rule, in regard to siliceous materials, the higher the percentage of free silica, the greater the capacity of a dust to cause disease. But dusts with an intermediate amount of free silica (e.g. from "continuous" brick kilns with 25 per cent), dusts with a low percentage of free silica (e.g., coal), and with no free silica (e.g., asbestos and certain metals) can also produce serious pulmonary damage. The possibility that certain components in a "mixed" dust may influence the action of free silica is mentioned.

In most dusts the harmful particles are those less than about 5 microns in size, but in the case of asbestos and some vegetable dusts the larger particles appear to be the more harmful.

Dust exposure is measured in terms of concentrations of air-borne dust and the period of time during which the individual is exposed. Mostly, silicosis and related forms of pneumoconiosis do not become evident until after exposure for a period of years, the actual time varying according to the type of dust and industry. Brief notes of a case of rapidly developing silicosis are given—the patient concerned having been exposed to very high concentrations of sandstone dust for about two years.

A list is given of the more important occupations and dusts associated with the hazard of pneumoconiosis, the chief risks being those with exposure to dust containing a significant percentage of free silica, and those involving exposure to coal or asbestos. In addition, reference is made to the radiographic abnormalities found in the lungs of 3 basalt crushers and 2 cinema biograph operators (the latter 2 men being broth-

ers), but it has not been proved whether these abnormalities were occupational in origin, although such a relationship seems reasonable in regard to the basalt workers despite the fact that basalt contains no free silica.

A short review is then given of the pulmonary disorders which have been described from exposure to a variety of mineral and vegetable dusts: a form of pneumoconiosis resembling asbestosis from talc, a form of pneumoconiosis resembling that of coal miners from graphite, the absence of pneumoconiosis or other pulmonary pathology from cement, metal fume fever from zinc and other metallic oxide fume, irritant effects on the respiratory tract from cadmium, acute pneumonitis and chronic diffuse granulomatosis from beryllium, pneumonitis from manganese, pulmonary nodulation without fibrosis or disability from iron oxide, unusual changes from aluminum, fibrosis from the manufacture of aluminum oxide from bauxite, nodular shadows from synthetic abrasives, chronic bronchitis, emphysema, and asthma from cotton, acute bronchiolitis and pneumonia from bagasse, and asthma from wheat.

The reported high incidence of pulmonary carcinoma in workers in chromate factories (but there is no evidence of carcinoma in a New South Wales chromate factory), and in persons exposed to arsenic and asbestos dust is mentioned, and finally the chief measures for the control of dust and the protection of workers are stated. 41 references.
—Author's abstract.

Thresher's Lung (Pulmonary Moniliasis). LENNART ZETTERGREN, Upsala, Sweden.
Acta Soc. med. Upsaliensis 55:257-313, Dec. 1950.

During the past two decades cases of an occupational lung disease have been reported from various parts of Europe, acquired in connection with the threshing of so-called burned grain, i.e., grain that has, owing to unfavorable weather during the harvest, been mixed with numerous varieties of microfungi. The infection has frequently been referred to in the literature as *thresher's disease*, and in some instances it has been suggested that it was due to the inhalation of threshing dust containing *Monilia*. Apparently, the disease has run a uniformly benign course, only a few post-mortems having been recorded.

On the basis of the above-mentioned observation that the inhalation of threshing dust may, under certain circumstances, produce pulmonary changes in man, the present author has submitted the definition *threshing dust lung* to analysis by means of animal experiments. The purpose of the investigation is, in the first place, to elucidate the particular lung changes occurring after inhalation of sterile threshing dust and of threshing dust containing *Monilia*, though otherwise sterile. Forty-eight rabbits were used for the investigation. They were left for an hour daily during 10 successive days in a dust chamber. Twenty animals were exposed to sterile threshing dust (series A), the others to sterilized dust mixed with *Monilia albicans* (series B₁ and B₁₁). The dust was collected at the threshing of the grain from which the fungal strain employed in the experiments had been isolated. The fungus was cultivated on wort agar.

All the animals in series A and B₁ were killed about five days after the last of the further development of the pulmonary changes. At autopsy of the animals, the

lungs and diverse other organs were examined and blood samples were taken for fractionated serum protein determination. The purpose of the latter was to prove, by the demonstration of a rise in the antibody protein, that the pulmonary changes in series B₁ and B₁₁ are partly of a mycotic nature. A roentgenologic examination was performed in a small number of animals from series A and B₁ in order to find out the extent to which experimental pulmonary moniliasis resembles the threshing dust disease in human beings.

The results of the present investigation are, as follows:

1. Inhalation of sterile threshing dust causes submiliary, histiocytic lung granulomata (dust granulomata).
2. Inhalation of threshing dust, mixed with *Monilia albicans*, though otherwise sterile, produces submiliary-miliary tuberculoid granulomata (fungal granulomata) in the lungs.
3. The dust and fungal granulomata have, on the whole, a similar distribution in the lungs, occurring predominantly in the inferior lobes in close connection with the terminal bronchioles and their immediate branches.
4. Compared to the fungal granulomata, the dust granulomata have a considerably shorter duration.
5. *Monilia* cells appear incapable of multiplying in the rabbit lung. For this reason, the formation of fungal granulomata seems, in the first place, to be the result of an endotoxic effect from disintegration products of the fungal cells that have primarily entered into the lung tissue together with the dust.
6. In pulmonary moniliasis in the rabbit peculiar perivascular lipophage clusters are seen in the lungs, probably due to a resorption of the lipids transported via the lymphatics and partly deriving from disintegrated fungal cells.
7. Inhalation of threshing dust causes bronchial irritation, which is increased when the dust contains *Monilia*.
8. The roentgen picture in experimental pulmonary moniliasis resembles that of the threshing dust disease in man.
9. Pulmonary moniliasis in the rabbit is associated with considerable increase of the serum γ -globulin fraction, indicating an antibody formation evoked by the antigenic substances of the *Monilia* fungus. 111 references. 29 figures. 4 tables.

Pulmonary Hemorrhage: Its Control by the Use of Intravenous Pituitrin. H. G. TRIMBLE, AND JAMES R. WOOD, Oakland, Calif. Dis. Chest 18:345-51, Oct. 1950.

Pulmonary bleeding may be divided into three categories: the massive hemorrhage that is almost immediately fatal; the type of bleeding that is little more than blood streaking but may involve the raising of clots; and, thirdly, the type we are interested in in this discussion, a brisk, not immediately fatal, very substantial hemorrhage, which may be recurrent. The authors do not discuss the pulmonary pathology responsible for the hemorrhage, but are interested here in the controlling of the bleeding. They outline very briefly the causes of pulmonary hemorrhage in their patients.

Pituitrin intravenously was first suggested in 1911 by Carl Wiggers. This was the only drug out of many tested in animals that showed ability to elevate the systemic

arterial pressure and simultaneously lower than in the pulmonary circuit. Rist of Paris found it was effective clinically. The method has been used widely in France since 1913. In the United States, however, while Wigger's work was known, the pituitrin was used intramuscularly. Used in that fashion, it is not successful and was gradually abandoned.

While reviewing a textbook by Rist published in 1943, the late Max Pinner noted this use of pituitrin and tried it on a small number of cases. It was through Dr. Pinner that our interest was aroused. We have supervised its administration on 46 occasions in a series of 32 patients. The technic is carefully described, and the original article should be read for these details because they must be followed meticulously. It has been found to be a safe, satisfactory, and very efficient procedure for the control of pulmonary hemorrhage.

Case reports illustrate various types of problems and the authors conclude that: (1) Pituitrin is the best available drug for the control of severe pulmonary hemorrhage but must be used intravenously to be effective. (2) Untoward effects are minimal and transient if the technic described is scrupulously followed. (3) This procedure can be used immediately for the control of pulmonary hemorrhage from whatever cause. An adequate diagnosis of the pulmonary condition responsible for the hemorrhage must be made subsequently. 10 references.—*Author's abstract.*

Studies on Tubercular Complement Fixation Test. VI. Concentration of Complement-Fixing Properties in Tuberculous Patients. SUSUMU MOMOI. Ann. Tuberc. 1:110-122, Dec. 1950.

The antitubercular complement-fixing properties were found roughly in direct parallelism with the dimension of the pulmonary involvement. As a whole, stronger complement-fixing properties were more frequently associated with the rapid erythrocyte sedimentation rate than were the milder ones. No relation was proved between the complement-fixing activities and the types of pathologic change of the pulmonary lesion. Patients under collapse measures were found to produce a rather meager concentration of the complement-fixing properties as compared with the others.

Physiological Aspects and Treatment of Emphysema. B. GORDON, H. L. MOTLEY, P. A. THEODOS, AND L. P. LANG, Philadelphia, Pa. Geriatrics 5:303-09, Nov.-Dec. 1950.

The term *emphysema* designates the condition of distended pulmonary alveoli. It is characterized in the broadest sense as a localized or general distention of the lungs occurring chiefly in middle age or later. The various types are classified as hypertrophic, focal, compensatory, and senile emphysema. The condition develops independently or in association with chronic pulmonary disease, and may be a concomitant of the aging process. In the discussion of emphysema of the aged, the hypertrophic and focal types are especially considered.

Function impairment of emphysema is concerned with the decreased movement of air in and out of the lungs. In complicated emphysema, as in associated vascular

deterioration, there is the additional factor of interference with gas exchange between the alveolus and general circulation.

Treatment of emphysema relates to general management and symptomatic relief. While rest is indicated in elderly persons, it is emphasized that undue physical inactivity is harmful. Indeed, a happy medium is required in order to maintain the maximum degree of pulmonary function and to facilitate resolution of intercurrent infection. Drug treatment for emphysema is disappointing; the expectorant drugs and sedation commonly used are more disturbing than effectual, and codeine favors the retention of secretions. In failure of the circulation due to primary myocardial disease there may be some benefit from digitalis and theobromine derivatives, but these drugs exert no useful action in *cor pulmonale*. Mercuhydrin, given intramuscularly once weekly, is sometimes effective for controlling persistent edema. It is essential to maintain an adequate intake of protein.

Intermittent positive pressure breathing is a useful adjunct in treatment. The mechanism relates to: (1) active inflation of the lungs under positive pressure from a cycling valve with maximal peak pressure at the mouth adjustable from 0 to 30 cm. of water; (2) passive deflation induced primarily by the elasticity of the lungs and chest wall; and (3) cycling which follows the patient's own pattern of breathing. The results provide increased alveolar aeration, favoring a reduction of residual air in the lungs as noted especially in cases with intercurrent infection of the respiratory passages. It is customary to use 100 per cent oxygen with aerosol (vaponefrin and neosynephrin). The treatments are given two or three times daily for the acute episodes and two or three times weekly for mild or continued manifestations (dyspnea, bouts of cough, and difficult expectoration). The usual period of treatment is 15 minutes. It is advisable to limit the dosage of aerosols to 8 drops—larger doses may cause palpitation. While the value of intermittent positive pressure breathing is chiefly symptomatic for the relief of dyspnea, certain objective effects have been noted. For example, it promotes bronchial drainage, provides more uniform alveolar aeration and protects against atelectasis, increases lymph flow from the lungs, combats acute pulmonary edema, provides a form of breathing exercise, improves muscle tone, and favors the uniform distribution of aerosols. The greatest value in the aged is to increase the possibilities for increased physical activity.

A preponderance of abdominal movements in breathing is characteristic of advanced emphysema. At first it appears helpful in moving air in and out of the lungs during respiration. As abdominal breathing becomes a requirement or a habit, the vertical excursions of the lungs are accentuated, the horizontal movements limited. While the apices become less and less active, the bases remain overactive, stretched, and distended. With progressive emphysema, the diaphragm is lowered and reduced in function, dead air accumulating in the bases. Accordingly, the initial value of compensatory abdominal breathing is lost. Abdominal compression, as obtained from wearing a special type of abdominal support, will elevate the diaphragm to the levels of expiration, providing an improvement of breathing with reduced cough and facilitated expectoration. 7 references.—*Author's abstract.*

MISCELLANEOUS

The Fluorescence Phenomenon of the Tongue. W. TOMASZEWSKI, Edinburgh, Scotland.
Brit. M. J. 117-20, Jan. 20, 1951.

In healthy people the dorsum of the tongue generally shows a reddish orange fluorescence when viewed in ultraviolet light screened with Wood's glass. This fluorescence is due to the production of porphyrin by oral microflora. Examinations of the tongue were made in over 400 persons and fluorescence has been demonstrated in the great majority of healthy persons, absence of fluorescence being found in only 11 per cent of children but in 53 per cent of people over 80.

Certain diseases such as pernicious anemia, hypochromic anemia, sprue syndrome, and vitamin B deficiency, which are associated with tongue changes, show a much higher incidence of absent fluorescence. In some cases of the above mentioned diseases the fluorescence was restored following treatment. Penicillin lozenges, chloramphenicol and aureomycin, by destroying the bacterial flora of the tongue, abolish the fluorescence in a few days.

Porphyrin present on the tongue can be synthesized by bacteria alone or produced by bacterial decomposition of hemoglobin derived from ingested food or from the host. Both methods of porphyrin production are theoretically possible. Under normal conditions porphyrin production is almost certainly due to bacterial synthesis.

Although some authors claim that a particular gram-positive bacillus is responsible for this phenomenon, the author's attempts at culture on special media of such a porphyrin-producing bacterium were unsuccessful. Nothing is known about the significance and ultimate fate of the porphyrin produced in the mouth. The opinion has been expressed by some authors that the absence of fluorescence is of some value as a sign of vitamin B deficiency. The author's clinical investigations cast some doubt on this view. 22 references. 2 tables.—*Author's abstract.*

Better Bread as a Source of Protein and Calcium for the Aged. CLIVE M. MCCAY, Ithaca, N. Y. Geriatrics 6:45-9, Jan. 1951.

Bread and other primary foods are very important in the nutrition of older people because of such diverse influences as low income, poor cooking facilities in living quarters, and poor dentures. The much advertised enrichment program has produced little improvement in the nutritive value of bread. The application of modern nutrition knowledge can render bread nearly a complete food at a cost of less than a cent per pound. After a number of years of testing on laboratory animals, a bread of excellent taste and nutritive value has been evolved. The basic ingredients of this bread consist of white flour 100 pounds, high fat soy flour 6, wheat germ 2, and nonfat dry milk solids 6. A similar bread lacking the germ is now used in all mental hospitals in New York State. This bread is richer in protein and has better protein quality than most commercial breads. Its content of milk solids also provides more assimilable calcium. The importance of open formula labels in order to improve the quality of bread is stressed.—*Author's abstract.*

Control of Vestibular Toxic Effects of Streptomycin by Dramamine. L. L. TITCHE, AND ANDREW NADY, Tucson, Ariz. *Dis. Chest* 18:386-89, Oct. 1950.

Nine cases of pulmonary tuberculosis who were receiving streptomycin complained of dizziness, but none complained of tinnitus or any disturbance of hearing. Audiometric and caloric tests revealed no significant deviation from those performed prior to the beginning of streptomycin therapy. These patients were given dramamine in doses from 150 to 400 mg. a day for an average of 5.3 days. Symptoms disappeared on an average of 3.57 days, except in 2 patients. There was no change in the eosinophilic count.

The authors believe that dramamine is a useful drug in the symptomatic relief of the dizziness encountered during streptomycin therapy, and further investigation may reveal that this drug may prevent the toxic effects of streptomycin on the vestibular apparatus. 26 references.—*Author's abstract.*

Treatment of Nephrosis with Cortisone. JOHN A. LUETSCHER, JR., San Francisco, Calif. *J. Clin. Investigation* 29:1576-87, Dec. 1950.

The administration of cortisone (a total of 0.5 to 2.1 Gm. over 5 to 16 days) to 11 patients with the nephrotic syndrome gave the following results: 1. During treatment proteinuria was accentuated moderately and the excretion of sodium fell to low levels. Creatinine clearance usually was increased; serum albumin and protein concentrations rose slightly. In 2 cases treatment was stopped because of a rising serum potassium concentration. 2. After cortisone had been administered, the patients followed one of two patterns: Six patients lost all edema and had a reduction in proteinuria varying from slight to almost complete disappearance of protein from the urine. Serum protein and albumin concentrations were increased to nearly normal levels in 2 cases. Improvement has been variable in duration from days to months. Five patients showed no clinical benefit, no increase in sodium excretion, and no decrease in proteinuria.

In comparing the two groups, it was noted that patients who responded with a diuresis showed: a decrease in the high level of sodium-retaining corticoids in the urine; a higher average creatinine clearance, which increased during and after treatment; a higher average serum sodium concentration before, and at the end of, treatment, rising to normal after diuresis; no difference in average total protein or albumin concentrations before, or at the end of, administration of cortisone, but much greater improvement after subsequent diuresis and lessening of proteinuria.

Four of the 5 patients who showed no clinical benefit after cortisone lost their edema when concentrated human serum albumin was given. The administration of albumin was followed by a reduction in the high level of sodium-retaining corticoids in the urine, a further increase in creatinine clearance, and an increase in the serum sodium concentration.

These changes in the nephrotic syndrome which occur during and after the administration of cortisone indicate that: (1) cortisone induces some improvement in renal function but aggravates some of the findings which generally have been attrib-

uted to renal disease; (2) the improvement which these patients show after the end of treatment coincides with a period of reduced adrenal activity, but may be maintained for a long period; (3) the adrenal plays an important role in the pathologic physiology of the nephrotic syndrome; (4) the fundamental disorder remains in the kidney, and long-term studies will be necessary to determine the ultimate effect of cortisone on the outcome. 21 references. 5 figures. 2 tables.—*Author's abstract.*

Exercise in the Treatment of Asthma. FRANCES BAKER, San Mateo, Calif. *Arch. Phys. Med.* 32:30-33, Jan. 1951.

Asthma has many causes. The patient with asthma acquires a fearful dread of attacks, which may in itself bring on attacks once the pattern is established, or may greatly increase the magnitude of an attack stimulated by the primary cause. Exercise can be used with specific medication but, if medication has no definite place, a well planned program of exercises is sufficient in itself.

Plan of Treatment: 1. Relaxation—The patient lies in supine position and is trained in relaxation, as described by Jacobsen. 2. Retraining in the Breathing Pattern—The patient with asthma develops an incorrect pattern of breathing known as *reversed breathing*. As the patient inhales in an erect position, examination with the fluoroscope will show the dome of the diaphragm rising slightly rather than descending, or fluttering without changing its position, or remaining fixed, usually depressed below normal because of the expansion of the lower chest. Clinically, the upper abdomen is drawn inward with inspiration instead of ballooning outward. The patient is taught to allow the diaphragm to go downward, ballooning out the abdomen with inhalation. With the attention on the diaphragm, the tense extrinsic muscles of the upper chest relax. The long expiration must follow, and to emphasize it, it can be timed, hummed or whistled. As control is gained in the lying, sitting, and standing position, exercises are given to stretch the muscles in contracture about the upper chest. Then good posture is developed. Strenuous exercises are added, and sports may become possible and are a means of developing the general motor system back to normal power and control as well as increasing vital capacity. The patient and family must have confidence in the physician, and authority is needed to make the patient persevere. Training in the correct manner of breathing, as opposed to the form assumed in asthma, gives the patient a means of controlling the attack and a weapon by which he can overcome his fear. 4 references.—*Author's abstract.*

Radioactive Di-iodo¹³¹-fluorescein: The Health Physics Aspects of Its Use for Diagnostic Studies. GEORGE V. LE ROY, W. R. TWEEDY, AND MOSES ASHKENAZY, Hines, Ill. *J. Lab. & Clin. Med.* 37:122-28, Jan. 1951.

Radioactivity in the thyroid and in samples of the lungs, lymph nodes, skin, liver, brain, adrenals, and skeletal muscle of a dog was measured 75 minutes after the intravenous injection of 185 μ c. of a stable preparation of di-iodo¹³¹-fluorescein. The largest amount was found in the thyroid, which contained 0.16 μ c./Gm., and the smallest amount in the skeletal muscle, in which 0.003 μ c./Gm. was detected. In all the sites of its deposition there appeared to be a rapid decrease in the concentration

of the radiodye, since in dogs which were sacrificed three or seven days after the injection of di-iodo¹³¹-fluorescein significant amounts of radioactivity were found only in the liver and thyroid.

External measurements of the radioactivity in the thyroids of 10 euthyroid patients, each of whom had been injected intravenously with 1.1 mc. of di-iodo¹³¹-fluorescein, showed that the amount of radioactivity in the thyroid on the first day may be as great as 0.7 μ c./Gm., or approximately 8.2 equivalent roentgens. Additional measurements of the radioactivity during the next three days demonstrated that the biologic half-life of I¹³¹ in the thyroid is about two or three days.

It is concluded from these and other data that there is no significant hazard to the patient, the doctor, or the attendants in the employment of di-iodo¹³¹-fluorescein in the dosage now employed for the localization of brain tumor. 8 references. 8 tables.—*Author's abstract.*

Effect of Boiling on Antigenic Activity of Tubercular Cell Juice. SHIRO NAGAO, SADAO KASHIHARA, AND TAKETOMO INOUE. *Ann. Tuberc.* 1:101-109, Dec. 1950.

Specifically precipitative principles, obtained from mechanically disintegrated *S. aertrycke* and *Myco tuberculosis* var. *bovinum*, have not been damaged by heating for 30 minutes at varied temperatures ranging from 60 C. to 98 C. Specifically precipitative principles, obtained from mechanically disintegrated tubercle bacilli of avian and bovine origin, have not been destroyed completely by 24 hour boiling. In the aqueous extract made from tubercle bacilli of human origins killed by being held at 98 C. for 30 minutes, the precipitative principles were demonstrated in as much strength as in that from living cells. The extract from boiled avian bacilli displayed lesser antigenicity as compared with that from fresh ones.

Growth Response of Swine Fed Penicillin. V. C. SPEER, H. M. MADDOCK, P. W. W. CUFF, AND D. V. CATRON. *Antibiotics and Chemotherapy* 1:41-48, April 1951.

Five replicate lots of six Duroc pigs each were allotted into 10 concrete drylots at weaning and were carried to a lot average of approximately 180 pounds. A basal ration of ground yellow corn, solvent soybean oilmeal, special steamed bonemeal, iodized calcium carbonate, iodized salt, trace minerals, vitamins A, D, and 8 B vitamins including crystalline vitamin B₁₂, was fed *ad libitum*. Procaine penicillin G was added at the rate of 1, 2, 10, and 20 mg. per pound of ration. Storage time for these rations varied from two to four weeks. The average daily gains for 0, 1, 2, 10, and 20 mg. of procaine penicillin G were 1.50, 1.51, 1.61, 1.64, and 1.64 pounds per day respectively, and feed required per 100 pounds of gain 352, 336, 330, 341, and 334 respectively. The gains made by the lots receiving 2 mg. procaine penicillin G were significant at $P = 0.05$, and 10 and 20 mg. levels were significant at $P = 0.01$. Pigs receiving penicillin required an average of 17 pounds less feed per 100 pounds of gain than those receiving no penicillin. (Significant at $P = 0.05$). A characteristic enteritis was controlled by the inclusion of more than 2 mg. of penicillin per pound of basal ration. 13 references. 1 figure. 3 tables.—*Author's abstract.*

Effect of Different Levels of Aureomycin with and without Vitamin B₁₂ on Growing-Fattening Swine. D. V. CATRON, H. M. MADDOCK, V. C. SPEER, AND R. L. VOHS, Ames, Iowa. *Antibiotics and Chemotherapy* 1:31-40, April 1951.

The effect of different levels of aureomycin, with and without vitamin B₁₂, were studied with growing-fattening pigs fed an all plant basal ration in concrete drylot. One hundred and twenty Duroc pigs were allotted to 10 replicated treatments on the basis of previous treatment, weight, age, condition, litter, and sex. Five levels of crystalline aureomycin hydrochloride (0, 5, 10, 20, and 40 mg.), with and without 10 mcg. of vitamin B₁₂, were added per pound of complete ration. The all plant ration consisted of ground yellow corn, blended solvent soybean oilmeal, minerals (including trace minerals), vitamins A, D₂, thiamin, riboflavin, niacin, pantothenic acid, pyridoxine, choline, and folic acid. The pigs were self-fed from an average weight of 36 to 200 pounds. All levels of aureomycin hydrochloride significantly ($P = 0.01$) increased average daily gains and feed efficiency. The 5 mg. and 10 mg. levels of aureomycin increased gains 0.16 pound per day and saved 19 pounds of feed per 100 pounds of gain. The 20 mg. and 40 mg. levels increased average daily gains 0.24 pound and decreased the feed required per 100 pounds of gain 27 pounds. The pigs receiving 10 mcg. of crystalline vitamin B₁₂ gained 0.17 pound more per day than those receiving no vitamin B₁₂, significant at $P = 0.05$. There were no significant aureomycin X vitamin B₁₂ interactions (complementary effect), indicating that aureomycin had the same effect on gains or feed utilization whether vitamin B₁₂ was present or absent. The incidence of scouring subsided for those pigs receiving aureomycin after the first week. 9 references, 4 figures, 7 tables.—*Author's abstract.*

Physical Medicine and Rehabilitation in Europe. FRANK H. KRUSEN, Rochester, Minn. *Arch. Phys. Med.* 32:10-16, Jan. 1951.

During a medical lecture tour through Europe in April and May 1950, the author visited various medical centers and spas interested in physical medicine and rehabilitation. In the Swiss spas there was a superb blending of physical therapy, climatherapy, dietotherapy, and music therapy with routine medical care. In Copenhagen, Denmark, an outstanding group of specialists in physical medicine, under the leadership of Dr. Svend Clemmesen, was conducting an excellent program of practice, teaching and research, especially in such fields as therapeutic exercise, physiology of exercise, electrical stimulation, and electromyography. In Sweden outstanding programs in vocational rehabilitation were observed, and in Edinburgh, Scotland, splendid work in the physical rehabilitation of patients having poliomyelitis or cerebral palsy was demonstrated by Mr. George Pollock.

In London there were many outstanding programs in physical medicine and rehabilitation in various hospitals, and good equipment, ample facilities, well-trained technical personnel, and close medical supervision were the rule. The departments of Dr. Frank Cooksey at the King's College Hospital, Dr. Philippe Bauwens at St. Thomas' Hospital, Dr. William Tegner at London Hospital, Dr. Hugh Burt at University College Hospital, and Lord Amulree at St. Pancras Hospital were notable. Of

especial interest were the programs in vocational placement, the fine clinical laboratories of biophysics, the well organized clinics for the treatment of arthritis by physical means, and the outstanding program in geriatric rehabilitation. In Dublin, Ireland, at the Fever Hospital a special program of rehabilitation for poliomyelitis was being developed by Dr. Chris McSweeney and, at St. Vincent Hospital, a new department of physical medicine was being planned.

European physicians, despite handicaps of governmental regimentation and shortages of finances, equipment, and modern literature, are forging ahead. Physical medicine and rehabilitation are growing apace; particularly outstanding work in these fields is being done in Copenhagen and in London. Prevocational training is accomplished more successfully in many European hospitals than is the case in many American hospitals. Vocational training of the seriously disabled is highly developed in Europe, especially in Sweden and in England. 13 references.—*Author's abstract.*

Motion Sickness in the Military Service. Wellcome Prize Essay, 1950. MAJOR H. I. CHINN, U.S.A.F., Res. Mil. Surg. 108:20-29, Jan. 1951.

The status of the antimotion-sickness drugs is reviewed, and the effectiveness of certain new drugs evaluated. A mixture of 50 mg. of benadryl and 0.65 mg. of hyoscine hydrobromide was considered the best prophylaxis tested. Half quantities of both benadryl and hyoscine hydrobromide were less effective but gave good protection with a minimum of side effects, as did hyoscine aminoxide (scopodex). Hyoscine, dramamine, and benadryl all gave good protection and approximately the same magnitude. Artane and perazil were less desirable, while chlor-trimeton, thephorin, decapryl, A-446, phenergan, and panparnix were all either ineffective or of questionable effectiveness. Studies employing ship, airplane, and swing form the basis for these conclusions.

Antimotion-sickness effectiveness is not related to antihistamine potency. It seems likely that the degree of central anticholinergic action determines in large part the effectiveness of the drug, although other, as yet unidentified, factors cannot be excluded. The need for animal screening technics and large scale operational testing of antimotion-sickness drugs are discussed. 28 references. 1 figure. 9 tables.—*Author's abstract.*

Biochemical Methods in the Treatment of Alcoholism, with Special Reference to Antabuse. ERIK JACOBSEN, Copenhagen, Denmark. Proc. Roy. Soc. Med. 43:519-26, July 1950.

Antabuse (tetra-ethylthiuramdisulphide) sensitizes the system to alcohol and causes intense discomfort after alcoholic beverages have been consumed, thus establishing a chemical wall between alcohol and the patient (chemical confinement). During this forced abstinence an effective treatment of external and internal etiologic factors can be performed.

A series of patients were treated with an antabuse dose, adjusted to the severity of the reactions after alcohol intake and the nature of the side effects observed (tired-

ness, drowsiness). During the medication a series of psychotherapeutic and social measures were instituted—112 were observed appropriately for 12 months, and 42 for 9 months. After 12 months 57 per cent were recovered socially, 14 per cent were much better, 12 per cent somewhat better, and 17 per cent unchanged. Younger patients with small decrease in social efficiency, patients with no or light psychoneurotic symptoms, and especially those who were more cooperative or/and had understanding and cooperative relatives showed the best results.

The medication is continued until the patient is regarded "safe" enough. Half of the patients who remained socially recovered for more than one year stopped medication after six to nine months. It is stressed that antabuse only forms a part in the treatment of alcoholism; all psychic and social factors leading to alcoholism must be treated. 20 references. 10 figures. 1 table.—*Author's abstract.*

Synthesis of Quaternary Salts of Heterocyclic Nitrogen Compounds Preliminary to the Use of Labeled Compounds in the Study of Cancer Chemotherapy. CARL T. BAHNER, Jefferson City, Tenn. Texas Rep. Biol. & Med. 8:448-55, Winter 1950.

Approximately 200 analogs of β -naphthacetylpyridinium iodide have been prepared in which the ring in the portion of the molecule marked A was a substituted or unsubstituted thiazole, benzothiazole, hexamethylenetetramine, pyrazine, quinoxaline, morpholine, piperidine, pyrrolidine, tetrahydroquinoline, tetrahydroisoquinoline, pyridine, quinoline, or isoquinoline ring; B was $-\text{CH}_2-$ or $-\text{CH}(\text{CH}_3)-$; C was H, $-\text{CH}_2-$, $-\text{CHOH}-$, $-\text{CO}-$, or $\text{C}(\text{NOH})-$; D was H, alkyl, haloalkyl, cycloalkyl, phenyl, 4-halophenyl, 3,4-dihalophenyl, 2,5-dihalophenyl, 4-alkoxyphenyl, 4-phenoxyphenyl, 4-phenylphenyl, 4-hydroxyphenyl, 3,4-dihydroxyphenyl, β -naphthacetyl, 5,6,7,8-tetrahydro- β -naphthacetyl, α -naphthacetyl or 4-halo- α -naphthacetyl; and the anion was Cl^- , Br^- , I^- , or ROSO_3^- . Very diluted, freshly prepared aqueous solutions of several of the hexamethylenetetraminium salts had an effect of the same order of magnitude as nitrogen mustard in inhibiting the respiration or rabbit bone marrow cells in serum and reducing the uptake of radio phosphorus. Results of screening tests against tumors are to be reported elsewhere. 16 references. 13 figures.—*Author's abstract.*

Remissions Caused by Tri-Ethylene Melamine in Certain Neoplastic Diseases. L. T. WRIGHT, J. C. WRIGHT, A. PRIGOT, AND S. WEINTRAUB, Harlem Hospital, New York. N. Y. J. Nat. M. A. 42:343-51, Nov. 1950.

In a series of animal experiments, tri-ethylene melamine (2,4,6 tris-ethyleneimino-1,3,5 triazine) showed outstanding growth-inhibiting activity against neoplastic tissue. Tissue cultures of human lymphosarcoma were inhibited markedly when grown in the presence of this drug. Clinical remissions were obtained in Hodgkin's disease, lymphosarcoma, and lymphatic and myelogenous leukemia in humans.

Fourteen patients with terminal and incurable neoplastic diseases were given the drug: 3 lymphosarcomas, 1 fibrosarcoma, 1 reticulum cell sarcoma, 1 anaplastic sarcoma, 1 osteogenic sarcoma, 1 chronic myelogenous leukemia, 2 Hodgkin's disease, 1 mycosis fungoides, and 3 cases of carcinoma.

The dose usually employed was 5 or 10 mg. daily (before breakfast) in courses of from two to four days. Clinical improvement generally began to appear seven to ten days after the first dose of the drug was administered. Courses were repeated as indicated clinically.

Early toxic manifestations noted were nausea, vomiting, diarrhea, and weakness. The nausea and vomiting were reduced considerably by the simultaneous administration of pyridoxin orally. Late manifestations (seven to ten days after initiation of therapy) were a temporary increase in the blood urea nitrogen, microscopic red blood cells in the urine, and leukopenia with no consistent variations in the differential blood count. The toxic manifestations were more severe in older, debilitated patients.

The best clinical results were obtained in the cases of lymphosarcoma, fibrosarcoma, reticulum cell sarcoma, Hodgkin's disease, and mycosis fungoïdes, as indicated by the decrease in the size of the tumors. At the time of publication, several cases were still under observation and had maintained their improvement at that time for as long as 79 days.

Histopathologic examination after treatment revealed marked increase in fibrinoid degeneration, fibrosis, and vascularization. One case of chronic myelogenous leukemia showed a marked decrease in the size of the spleen, a progressive decrease in the white blood cell count, and an improvement in the differential and bone marrow pictures.

Three of the 9 patients in whom the neoplastic condition showed some apparent improvement expired shortly after the course of treatment. These cases were: 1 fibrosarcoma, 1 reticulum cell sarcoma, and 1 mycosis fungoïdes. The osteogenic sarcoma, the anaplastic sarcoma, and 3 carcinoma cases showed no improvement on the drug and eventually expired. 7 references, 6 figures, 3 tables.—*Author's abstract.*

Some Contributions of Modern Genetics to Medicine, NORMAN T. J. BAILEY, Cambridge, England. Brit. M. J. No. 4696:8-12, Jan. 1951.

Modern genetics began with the work of Mendel. Published in 1866, Mendel's work went almost unnoticed until rediscovered in 1900. Since then genetics has made rapid progress and has been applied to the whole range of living organisms from viruses and bacteria to man himself. Mendel's laws can be subsumed under the single heading of "particulate inheritance," according to which the basic units of heredity are material particles—the genes—which are shuffled and redealt to succeeding generations according to certain simple rules. The random element thus introduced necessitates the use of statistical methods, particularly in man, where families are small and mating types uncontrolled. Mendel's laws require modification due to linkage, which results from genes in a single chromosome tending to remain together, and to mutation, which is the rare spontaneous change of a gene or the occurrence of chromosomal abnormality.

Genetics has made substantial contributions to the improvement of stock in both plant and animal breeding. Large increases in the production of penicillin have been obtained by selecting high yield mutants, produced in large numbers by the action

of x-rays on *Penicillium*. The genetic study of organisms resistant to antibiotics has applications to planning the clinical use of the latter. Although mutation is an integral part of the evolutionary process, it is essential to avoid heavy irradiation of the germ plasm through faulty technic in radiology or in the use of atomic energy, if appreciable deterioration in human heredity is to be prevented. The experimental study of animal diseases, with genetic and clinical characteristics similar to those in man, such as hemolytic disease of the newborn and hemophilia, offers great possibilities.

The inheritance of common serologic characters, particularly the eight main blood groups, is of great practical importance, especially in problems of relationship and paternity. About half the men against whom affiliation orders are made are wrongly accused. Sixty-two per cent of the wrongly accused could be exonerated by the use of all the available blood groups, and considerable injustice could thus be prevented. With certain rare blood groups or rare abnormalities, *positive* evidence of paternity sometimes would be available. Legal criticism of the reliability of blood group evidence based on the possibility of mutation can be countered by explaining the extreme rarity of the latter—rarer than 1 in 50,000 in man.

Various phenomena associated with the Rhesus factor can be clarified by an understanding of the genetic mechanism involved, and the risks of pregnancy in Rhesus-negative mothers can be approximately estimated knowing the husband's blood group and the condition of previous children.

Many pedigrees of rare inherited abnormalities are collected by physicians during their ordinary work. Such genetic data, when properly obtained, has a permanence not so characteristic of other branches of medicine. The original individual through whom a pedigree is first noticed should be clearly indicated. A good family record gives as much detailed information as possible about both the clinical state and the social background of this patient and of his near relatives, especially parents, siblings and children. Care should be taken to record the method of ascertainment (the way in which the data is collected) because this knowledge is essential to a valid interpretation of the data. This is especially true of data collected in the hope of finding genetic linkages.

There are important applications in the field of eugenic prognosis, which will become progressively more valuable with the increasing number of marked chromosomes. Many serious human defects occur in heterozygotes and, like Huntington's chorea, do not appear until after the normal age of marriage. If several common characters linked to such defects were known, it often would be possible to predict which individuals were carrying the mutant gene in question. The linkage in certain families of hemophilia and color blindness has already been used to give improved estimates of the chance of the daughters carrying a gene for hemophilia. In other cases the chances of a consanguineous marriage producing affected children can be calculated in families harboring serious recessive defects.

The discovery of hereditary factors in the etiology of disease often can be used as an aid to diagnosis. In one case the choice between a variety of diagnoses following a hematemesis was resolved by the discovery that the patient's father had suffered

from multiple telangiectasia. Again, the relatives of sufferers from familial acholuric jaundice could be examined by the appropriate laboratory tests and protection obtained by splenectomy. There can be no doubt that medical genetics has a real contribution to make to the cause of suffering humanity, and that its importance will increase greatly in the future. 1 figure.—*Author's abstract.*

Tissue Cultures of Cells from Body Fluids. C. M. POMERAT, Galveston, Texas. Texas Rep. Biol. & Med. 8:521-32, Winter 1950.

The purpose of this report is to re-emphasize the value of utilizing human cellular material for experimental studies. The ease of handling and varieties of opportunities suggested by preliminary work on the physico-chemical and biologic properties of pleural and peritoneal fluid is outlined. Suggestions are offered concerning technical procedures and experimental attacks on the fluid and cellular components of serous exudates. 24 references. 2 tables.—*Author's abstract.*

Chronic Beryllium Poisoning. H. S. VAN ORDSTRAND, JOSEPH M. DE NARDI, AND ROBERT W. SCHNEIDER, Cleveland Clin. Quart. 18:48-54, Jan. 1951.

Four patients treated with ACTH are reported. Each had progressive and disabling chronic beryllium poisoning. At least a moderate degree of temporary improvement has occurred in each case with this therapy. We have obtained no such benefit from any other form of treatment.

This report covers only a period of up to six months observation with ACTH medication. Prolonged observation is necessary before a final evaluation can be made. ACTH therapy, as demonstrated in these patients, may serve as at least a regressive measure. 1 reference.

Parathion Poisoning. D. O. HAMBLIN, New York, N. Y. Am. Practitioner 2:1-12, Jan. 1951.

Parathion is more effective but also more dangerous than older agricultural insecticides. Acute poisonings, some fatal, have followed failure to observe precautions against inhalation and skin absorption. These accidents are preventable. If they occur, treatment may be life-saving. Case histories of patients accidentally exposed to parathion are given.

The systemic effects of parathion are qualitatively similar to those of other cholinesterase inhibitors, and to the effects of the acetylcholine analogues (pilocarpine, muscarine, arecoline, mecholyl, and doryl). Effects of parathion are interpreted as the result of accumulation of endogenous acetylcholine at synapses of the nervous system. They include giddiness, headache, nausea, vomiting, cramps, diarrhea, miosis, sweating, salivation, lachrimation, confusion, weakness, and muscular fasciculations. A sense of tightness is felt in the chest as the bronchi constrict and fill with mucus. Fatalities appear to result from constriction and secretions in the bronchi or arrest of the heart. Recovery is complete and uneventful unless the asphyxia has been sufficient to cause headaches.

Treatment may be effective if atropine grain 1/100 to 1/50 (0.65 to 1.3 mg.) is given at once and every hour or oftener as needed, to keep the patient fully atropinized (mouth dry, pupils dilated). If the lungs have filled before the atropine takes effect, clear the bronchi by postural drainage. Oxygen is then indicated. Morphine is contraindicated. Muscular fatigue and weakness may reach a degree requiring artificial respiration. Following even mild symptoms, no additional exposure to parathion or other phosphate esters should be permitted until time for cholinesterase regeneration has been allowed.

Intoxication by parathion or other CE inhibitors is an acute episode of 24 to 48 hours. It is terminated by cholinesterase regeneration and is followed by a period of gradually decreasing susceptibility to small exposures. Successive parathion exposures may deplete cholinesterase reserves progressively and create a susceptibility to small doses of tetraethyl pyrophosphate or vice versa. Parathion and other phosphate insecticides are not irritating locally, but they produce local cholinergic effects. There has been no chronic or cumulative action other than that on CE. Dangerous parathion residues have not been detected on food crops sprayed at the proper stage before harvest. 13 references.—*Author's abstract.*

Species Variability in the Inactivation of Penicillins G and K. NATHAN RAKIETEN, GEORGE VALLEY, AND EDNA W. LYON, Syracuse, N. Y. *Antibiotics & Chemotherapy* 1:113-17, May 1951.

In studying the factors which might play a role in the inactivation of pure penicillins G and K *in vivo* and *in vitro*, a species difference was noted between the rat and rabbit. In the intact rabbit K disappears from the blood more rapidly than G following intravenous administration. This is also true in the renal-ligated rabbit. In contrast, in the eviscerated renal-ligated rabbit the blood levels obtained after intravenous administration of K approach those obtained with G after equilibration has occurred. The rat differs from the rabbit in that in the renal-ligated animals, and apparently in the intact also, G and K disappear from the blood within the same time intervals. However, in the eviscerated renal-ligated rat both G and K remain in the blood stream at constant levels for at least three hours. *In vitro* studies, using the Warburg apparatus, failed to show any marked differences between rabbit and rat liver slices. Neither inactivated G and both inactivated K. Apparently some mechanism is present in the liver of the intact and renal-ligated rat which allows for the inactivation of G as well as K. 15 references. 3 tables.—*Author's abstract.*

The Cerebrospinal Fluid in Methyl Alcohol Poisoning. E. REINER, Worcester, Mass. *Arch. Neurol. & Psychiat.* 64:528-35, Oct. 1950.

Sixty-four spinal punctures were performed on a group of 13 young, male adults with acute methyl alcohol poisoning. In 10 of the patients the first spinal puncture was performed on the third day after ingestion. Two had pressures of 300 and 390 mm. of water, respectively; 3, a pressure of over 200 mm. of water; 3, a pressure of over 150 mm., and 2, a pressure of under 150 mm. of water. It was not possible to deter-

mine from clinical findings in the conscious patient the presence of an increased cerebrospinal fluid pressure. Direct manometric measurement is, therefore, indicated to determine the spinal fluid pressure in all cases. Patients known or suspected of having ingested methyl alcohol should have repeated determinations of the spinal fluid pressure during the week following ingestion, in addition to the accepted standard procedures. Elevated pressures should be reduced by drainage. This procedure was judged to be an important emergency and therapeutic measure. Generally, patients with the most obvious ophthalmoscopic changes also had abnormally high spinal fluid pressures. Abnormal elevation of spinal fluid pressure occurred in 5 of 11 patients throughout a five week period of convalescence. As far as is known, a persistent elevation of cerebrospinal fluid pressure over a five week period following acute methyl alcohol poisoning has not been previously recorded. 3 references.—*Author's abstract.*

dermatology

The Electrophoresis of Egg White and Crystalline Egg Albumin. SAMUEL GROSBERG, AND MURRAY PESHKIN, New York, N. Y. Ann. Allergy 87:13-17, Nov.-Dec. 1950.

The purpose of this study was to determine whether a stock solution of egg white and a chemically prepared crystalline egg albumin could be transported into the human skin by electrophoresis. These experiments were done quantitatively to ascertain the permeability of the skin to these molecules (which are markedly different than those of pollen), along with studies on the fundamental data of their skin deposits.

Employing the method of Abramson and his co-workers of introducing active molecules of pollen extracts into the human skin by electrophoresis, it was shown that not only the stock solution of egg white but also crystalline egg albumin could be transported into the skin thusly.

A child clinically sensitive to egg and confirmed by a positive skin test was used as the subject. A brief history and pertinent physical findings were given.

The method and preparation of the materials used in the experiments were described.

Experiments were done at intervals of one week. Of special interest was the observation following the electrophoresis of the 1:10 and 1:100 solutions of the 50 per cent egg white glycerine mixture in that the test subject exhibited signs and symptoms consistent with systemic reactions.

Data is given on the complex nature of egg white and also of subjecting the latter to electrophoretic analysis by the moving boundary method of Young, who reported five or six such boundaries, whereas with the ultracentrifuge method only one sedimenting boundary occurred. An explanatory note was given on why the crystalline egg albumin reacted positively only with the negative pole.

It was concluded that the purification of egg white may provide a new tool for studying skin permeability in the allergic patient as well as certain immunologic reactions to the fractions obtained. 9 references.—*Author's abstract.*

Failure of Modern Footwear to Meet Body Requirements for Psychic and Thermal Sweating. L. EDWARD GAUL, AND G. B. UNDERWOOD, Evansville, Ind. Arch. Dermat. & Syph. 62:33-45, July 1950.

The foot portion of socks and hose should be made of absorbent fibers, readily permitting the transference away from the feet of psychic and thermal sweat. Shoe materials should allow the rapid passage of water vapor so that evaporation from the feet can play its important role in the regulation of foot and body temperature. The skill of athletes should be enhanced by the wearing of footgear that meets physiologic requirements. Environmental water can be kept away from the feet by such means as loose-fitting overshoes or galoshes. 3 figures. 5 tables.

Cutaneous Sensitivity to Monoglycerol Para-Aminobenzoate. GEORGE H. CURTIS, AND P. F. CRAWFORD. Cleveland Clin. Quart. 18:35-41, Jan. 1951.

A second case of cutaneous sensitivity to monoglycerol para-aminobenzoate, an ingredient of a proprietary sunburn preventive, is reported. The dermatitis was reproduced by ingestion of para-aminobenzoic acid. Cross sensitivity to PABA, certain of its alkyl derivatives, and structurally related dyes was demonstrated. The immunochemical theory of complementarity between allergen and cellular antibodies in the epidermis is discussed in relation to cross sensitization in the skin. A compilation of chemicals is arranged in groups and in order of frequency in producing positive reactions from which structurally related chemicals may be selected for a rapid survey by the patch test technic in order to determine the trend of cross sensitization. 14 references. 2 tables.

Joint Medicine-Dermatology Conference: Disseminated Lupus Erythematosus. R. D. JOHNSON, Ann Arbor, Mich. Univ. Hosp. Bull. 17:43-53, Feb. 1951.

A case of acute disseminated lupus erythematosus was presented at a joint Medicine-Dermatology Conference illustrating the typical clinical picture of butterfly eruption around the eyes and over the bridge of the nose, the arthralgia, fever, lymphadenopathy, leukopenia with a differential shift to the left, anemia and the usual urinary findings. Response to ACTH with clearing of the skin lesions, concomitant elevation in blood pressure and white blood count with the differential shifting to the right and the appearance of glycosuria was indicated as the usual course during such treatment. Dr. J. W. Conn mentioned that general experience has indicated that early and acute cases are much more responsive to ACTH than more chronic ones.

In this patient, as the dose of ACTH was "tapered," the appearance of fever, disappearance of glycosuria, decrease in blood pressure, reappearance of leukopenia with a differential shift to the left, and a rise in the circulating eosinophiles above zero demonstrated a recrudescence or "flare" of symptoms breaking through the "screening" effect of the ACTH. Dr. Cyrus Sturgis pointed out that, although the disease is most common in young females, in recent years it has been observed in most any age and in males as well.

Dr. Muriel Meyers described and illustrated the technic of the "lupus erythematosis cell" phenomena and pointed out that because the phenomena are not entirely specific, although nearly so, Berman and Axelrod have suggested that a minimum of 10 "lupus erythematosis cells" or rosettes per 500 mature granulocytes be found before considering a test conclusive.

Dr. A. C. Curtis made clear the importance of the incubation period in the lupus erythematosis preparation (30 minutes at room temperature) for positivity in the truly positive case. His experience also found the lupus erythematosis phenomena positive when ascitic or pleural fluid was used as well as serum if the patient had subacute or acute lupus erythematosis. It was not positive when urine was used or in chronic discoid lupus erythematosis. He then presented case histories with photographs together with analyses of 132 cases of disseminated lupus erythematosis and their laboratory findings. 9 references, 4 figures, 3 tables.—*Author's abstract.*

Minimal Sodium Losses Through the Skin. K. D. ARN, AND A. REIMER, Ann Arbor, Mich. *J. Clin. Investigation* 29:1342-46, Oct. 1950.

The widespread administration of low sodium diets makes it highly desirable to determine the amounts of sodium lost by each of the three excretory paths. Urinary and fecal losses have been investigated thoroughly, but little reliable data regarding the loss of sodium through the skin under conditions in which the sweat glands are inactive are available. Therefore, 2 normal subjects were placed on a daily dietary intake of 10 mEq. of sodium; after they had achieved sodium balance, the losses of sodium through the skin in the absence of sweating were determined. It was found that the losses were 4.06 mEq. and 4.40 mEq. every 24 hours respectively; and when these sodium losses were calculated on the basis of surface area, the values were respectively 2.22 mEq. and 2.18 mEq. per square meter of body surface every 24 hours. 14 references, 2 tables.—*Author's abstract.*

Clinical Observations in the Use of Combined Calcium-Antihistamine Therapy in the Treatment of Urticaria. A Preliminary Report. WILLIAM PARKER, St. Louis, Mo. *Ann. Allergy* 8:765-66, Nov.-Dec. 1950.

Twenty cases of urticaria associated with arthralgia and swelling in one or more joints, which were unresponsive to antihistamine alone, were treated with combined calcium and antihistamine intravenously, supported by oral calcium and antihistamine therapy. In addition to the usual heat response to calcium, all patients developed aches and pains in the affected joints and muscles and a feeling of feverishness all over the body. This developed about two hours after injection and subsided about three hours after onset, followed by complete relief from the swelling and arthralgia. Wheals, though still present, were free of itching.

A possible explanation for this phenomenon may be the counteracting of the toxic effect of excess histamine by the antihistamine, plus the effect of the action of the calcium acting synergistically with the antihistamine to restore normal tissue permeability. 7 references.—*Author's abstract.*

Riehl's Melanosis and the Adrenal Glands. LEO SPIRA, London, England. Arch. Int. Med. 86:682-90, Oct. 1950.

In 1917 Riehl described an abnormal facial pigmentation which he attributed to the protracted ingestion of a noxious substance contaminating food and sensitizing the skin to the actinic action of the sun. The pigmentation was similar to that encountered in chronic arsenical poisoning or in pellagra. In 1946, Spira suggested that the noxious substance might be fluorine, which is contained in variable amounts in practically every article of food and drink. Fluorine is a nerve toxin with a peculiar predilection for those fibers of the vegetative nervous system that supply the endocrine apparatus, especially the adrenal and the parathyroid glands. This leads to dysfunction of the chromaffin system in the course of chronic adrenal insufficiency and to hypoparathyroidism. A case of Riehl's melanosis is recorded in which facial pigmentation was accompanied by hypoplesia, hypochochlorhydria, hypoglycemia, diminished excretion of 17-ketosteroids, high blood urea, and frequent attacks of influenza. The patient's general health was, however, not impaired, and absence of asthenia, of more generalized pigmentation involving the buccal mucosa, of pulmonary disease, and of calcification of the adrenal glands precluded the diagnosis of Addison's disease. 12 references. 5 figures.—*Author's abstract.*

Dermatomyositis: A Report of a Case. R. B. PILCHER, Sydney, Australia. Brit. J. Dermat. 62:494-97, Dec. 1950.

A boy, aged 13 years, had suffered from asthma, and his family had moved to a drier climate a year prior to the onset of this condition. Two months later he developed measles, and four months later he noticed general weakness, reddish purple discoloration around the eyes, a rash on the trunk and limbs, and pain and stiffness in the limb muscles. An attack of earache and fever occurred at this time. Antihistaminic treatment did not influence his condition. The stage of onset passed, and the patient felt well but could not run nor put on his shoes owing to the muscular stiffness. No relevant family history was obtained.

The patient was admitted to a hospital, and an erythematous squamous eruption was seen over the extensor aspects of the limbs, buttocks, sides of the neck, and front of chest, with thickening of the skin in these areas. The skin of the eyelids was heliotrope, and the eyelids were edematous. The proximal limb and girdle muscles were wasted and firm on palpation. Moderate limitation of movement was seen, especially extension of elbows and flexion of knees. Investigations were not informative, and the skin biopsy was equivocal. Physiotherapy, consisting of kneading the muscles and passive and active movements, was beneficial.

Brief comment is made on the etiologic factors. Asthma may be a predisposing factor, and cold may be a precipitating factor. A similar case reported in 1937 in a boy of 9 years following measles is recalled. The diagnosis and differential diagnosis are considered in this case. Treatment is palliative but not specific, and the prognosis is guarded. [Written prior to the advent of "cortisone."]

A color illustration demonstrates the heliotrope eyelids. 9 references. 2 figures.—*Author's abstract.*

The Intramucosal Test and a Comparison of its Reactivity with the Intradermal and Conjunctival Reactions. H. SHERMAN, AND L. A. FELDMAN, Brooklyn, N. Y. Ann. Allergy 8:734-39, Nov.-Dec. 1950.

The nature of the intramucosal reaction was investigated and its reactivity compared quantitatively with the ophthalmic (drop) and intracutaneous tests. Ten pollen-sensitive subjects were studied: 2 tree, 2 timothy, and 6 ragweed cases. Tests were performed in the lower ocular conjunctiva, using a fine needle. Reactions developed rapidly and were usually localized, lasting about one hour. The reactions consisted of dilatation and engorgement of the fine and larger vessels of the underlying sclera and ocular conjunctiva, and injection of the caruncle. Slit lamp studies confirmed these findings. Stronger reactions produced conjunctival edema and a more intense congestion of vessels. Itching and lacrimation were significantly absent. Reactions could be controlled readily with adrenalin.

A comparative study of threshold reactions revealed that the intramucosal response was at least 10 times more sensitive than a similar intradermal test, and about 100 times more sensitive than the ordinary eye test using the drop technic. Suitable controls were studied.

The intramucosal test is not advocated at this time as a general diagnostic procedure. 8 references. 4 figures. 5 tables.—*Author's abstract.*

A Device Useful in Recording Nail Changes. J. H. TWISTON DAVIES. Brit. J. Derm. 63:33, Jan. 1951.

For the purpose of photographing the nails, the ordinary view of the back of the hands is unsatisfactory. Few patients have the manual dexterity or power of concentration to make and sustain a "fist" for long enough to allow the photographer to take a satisfactory picture. The apparatus described here is a "handle-bar" which, when gripped in a natural way by the patient, brings all the nails of both hands within a field of 7 x 5 inches. 2 figures.—*Author's abstract.*

syphilology

Results of Penicillin Therapy for Neurosyphilis at Bellevue Hospital. BERNHARD DATTNER, New York, N. Y. J. Ven. Dis. Inform. 32:33-39, Feb. 1951.

A report is made on 438 patients treated with penicillin alone at Bellevue Hospital for active neurosyphilis, 114 having had asymptomatic neurosyphilis, 90 meningo-vascular syphilis, 82 tabes dorsalis, 67 general paresis, 31 taboparesis, 40 optic atrophy, and 14 spastic paraplegia. Patients had been followed up from 6 to 75 months after treatment, all but 45 having been examined for more than one year.

Of the 438 patients, 400 were considered to have a satisfactory status after the original course of penicillin, although 17 of the 400 were retreated a second time to note the effect on clinical improvement. In no case was retreatment of patients who had satisfactory spinal fluid findings effective in producing significant clinical improvement. Of the 38 failures following the first treatment, 22 received less than

6 million units of penicillin at their original treatment. Only 31 of the 38 failures following the first course of penicillin were retreated at Bellevue Hospital; 3 were retreated elsewhere, and 4 are still under observation because of good clinical status in spite of the persistence of slight pleocytosis. Of the 31 retreated patients, 25 were retreated only once with from 6 to 8 million units of penicillin over a period of 15 to 20 days; 6 patients had to be retreated more than once. The 3 patients retreated only twice received 6, 9, and 20 million units, respectively, at the second retreatment; the 3 patients retreated three times received 15, 12, and 30 million units respectively for the second retreatment and 25, 30, and 60 million units, respectively, for the third retreatment. Of the 31 retreated patients, 27 had satisfactory spinal fluid findings when last examined; 2 had not yet been followed up for six months after the last retreatment; 1 failed to return for a third retreatment, and 1 continued to have pleocytosis and abnormal colloidal gold curves in spite of a negative spinal fluid Wassermann test after a third retreatment. Thus, of the 438 patients followed up for more than six months all but 4 had a satisfactory status when last examined.

The total dosage of penicillin used for the first treatment of these patients varied from as low as 2 million to as high as 9 million units. The dosage now advised is 9 million units, with individual injections of 600,000 units of procaine penicillin in oil and aluminum monostearate daily for 15 days. For the first retreatment, 15 to 20 million units are advised. In the opinion of the authors, penicillin alone has given as good results in the treatment of all forms of neurosyphilis, including general paresis, as has malaria or any other kind of fever therapy. The evaluation of the effectiveness of treatment is best made by serial spinal fluid examinations at six month intervals. Abnormal cell counts should become normal within six months after treatment, and there should be gradual but progressive improvement in quantitative specific tests for syphilis, total protein, and colloidal tests. 3 references. 4 tables.—*Author's abstract.*

A Study of the Filter Paper Microscopic (FPM) Test for Syphilis. AD HARRIS, Washington, D. C. *J. Ven. Dis. Inform.* 32:1-4, Jan. 1951.

Results obtained in a study including five testing laboratories and a series of 1,011 blood specimens tested separately in the Venereal Disease Research Laboratory indicate that the FPM test is less reactive than the other testing methods used. Attempts to increase the reactivity level of the FPM test to that of the other procedures listed by modifications, including the substitution of more reactive antigen emulsions, were unsuccessful. These findings indicate that the FPM test, as published, is less reactive than several other widely used testing procedures and therefore would be less efficient as a "detector" test for field survey use. This fact should not militate against the use of the FPM test in the field under conditions in which another type of blood collection cannot be used. The figures in this paper do not necessarily reflect the relative efficiency of the several listed methods in the detection of congenital or other phases of syphilis of any specific age group, since the proportionate numbers of weakly or strongly positive serologic reactors in these groups have not been studied by the authors. 1 reference. 7 tables.—*Author's abstract.*

High Potency of a Penicillin G in Experimental Syphilis. R. C. ARNOLD, Washington, D. C. *J. Ven. Dis. Inform.* 32:5-6, Jan. 1951.

Previously reported CD_{50} range for crystalline penicillin G varied from 1000 to 2000 units per kilogram of body weight. This report deals with a crystalline penicillin G that appears to have high antispirochetal values in syphilitic rabbits. The results of the experiment are summarized in the table.

Experiment	No. Animals	Total Units Penicillin	No. Doses	Hrs. Between Doses	No. Days Treated	No. Cures	No. Failures
A	31	2,000	24	4	4	31	0
B	19	800	24	4	4	19	0
C	15	800	24	4	14	15	0
D	28	230	24	4	4	22	6
E	32	115	24	4	4	28	4

The results indicate that this lot of crystalline penicillin G was very effective in the treatment of syphilis in animals. Eight hundred units per kilogram of body weight were equally effective in a 4 day or 14 day treatment schedule. The smallest dosages used, 230 and 115 units per kilogram of body weight were well above the CD_{50} limits. Variations in the potency of crystalline penicillins may have influenced the therapeutic results in this as well as in human studies. 3 references. 1 table.—*Author's abstract.*

Effectiveness of Penicillin in the Prevention of Congenital Syphilis. LOREN W. SHAFFER, Detroit, Mich. *Arch. Dermat. & Syph.* 63:91-103, Jan. 1951.

This report is a study of the incidence of congenital syphilis in the offspring of 631 syphilitic pregnant women who were treated with penicillin and delivered during 1948 and 1949. The incidence of abortions, miscarriages, stillbirths, and neonatal deaths closely parallels those reported in nonsyphilitic pregnancies.

We classified as syphilitic, 5 infants, 1 stillbirth, and 1 neonatal death, or 1.1 per cent. It was believed that placental shock may have been the cause of the one stillbirth classified as syphilitic. The neonatal death and the deaths of 4 of the congenital syphilitic infants were due to relapse or reinfection late in pregnancy in women who failed to remain under observation. The remaining infant diagnosed as syphilitic was treated at one month on the basis of positive serology and may not have had syphilis.

Women who had been treated adequately and progressed to seronegativity do not need to be retreated during pregnancy, provided they remain continuously negative. Likewise, seroresistant cases, particularly of late syphilis positive in low titer, need not be retreated. However, the increase in disastrous results that occurred in the seropositive cases in this series suggests that it is advisable to retreat the pregnant woman when there is any question of unsatisfactory response to previous therapy or of her unwillingness to remain under close observation.

Positive serologic tests on cord blood are not diagnostic of congenital syphilis, especially in well treated mothers. The Kahn cord test was positive in 100 infants

from 227 mothers whose serologic tests were positive at delivery. Only 4 cases of congenital syphilis were diagnosed in these 100 infants.

The babies of mothers treated late in pregnancy may show persistent but gradually decreasing titers that may require several months to become negative. These probably represent infants infected in utero but responding in a satisfactory manner to the treatment administered to the mother. Likewise, osteitis of the long bones as demonstrated by x-ray of such infants does not necessarily call for further treatment. Penicillin therapy should be given at any time in pregnancy short of actual delivery. If it is too late to prevent infection, such treatment is very effective in curing an infected fetus in utero. Adequate penicillin treatment given during pregnancy is nearly 100 per cent effective in the prevention of congenital syphilis or in curing an already infected fetus in utero, provided further serologic and clinical progress is satisfactory. 8 references. 7 tables.—*Author's abstract.*

The Relationship between Changes in Cerebro-Spinal Fluid and the Phase and Activity of Neurosyphilis. JULES ARCHAMBAULT, Quebec, Canada. *Canad. J. Pub. Health* 41:464-68, Nov. 1950.

From the study of the four essential laboratory tests for neurosyphilis—the quantitative complement fixation test, cell count, total protein content of spinal fluid, and colloidal reaction—it is clear that a definite relationship exists between the findings of these tests and the syphilitic process in the central nervous system.

Taken together, abnormal findings in the spinal fluid form a pattern which yields information essential for both the diagnosis and the management of neurosyphilis.

The diagnosis of neurosyphilis, with rare exceptions, can be made only with the aid of spinal-fluid examinations (Thomas). Spinal-fluid tests should be part of the medical and neurologic examination of every patient who is known to have, or is suspected of having, syphilis because of symptoms, history, or a positive blood serology. It should be remembered that, occasionally, the blood may be serologically negative and the spinal fluid present definite evidence of syphilis.

When found positive in the spinal fluid, the Wassermann or complement-fixation test (also the flocculation tests) constitutes absolute proof that the patient has or has had neurosyphilis. Conversely, a normal spinal fluid is strong presumptive evidence of the absence of neurosyphilis; it excludes a diagnosis of active general paresis. Exception must be made for rare cases of vascular neurosyphilis and "burned out" tabes, which may give negative results with all tests.

In the management of neurosyphilis, the first task is an accurate determination of activity by clinical or spinal fluid evaluation.

Appraisal of the clinical syndrome in relationship to treatment is difficult and misleading. Symptoms may persist or progress as the result of past activity and irreparable destruction of essential nerve tissue. Clinical improvement is often transitory and not indicative of a definite arrest. Asymptomatic neurosyphilis is not necessarily an inactive and benign form of neuraxis involvement.

According to the present day consensus, we must rely on spinal fluid findings for an accurate evaluation of activity in neurosyphilis.

A positive Wassermann reaction merely indicates the specific nature of the infection; its activity may be completely arrested. The activity of the process is clearly demonstrated when the fixation test is associated with a high cell count, increased protein, and a first zone colloidal reaction. This spinal fluid syndrome is characteristic of, but not exclusively associated with, general paresis.

In cases under specific therapy, if cell count and protein content of fluid remain above normal levels, there is evidence that inflammation persists and that retreatment is required. Should the patient's fluid contain no more than four to five cells per cu. mm. and 40 mg. or less total protein per 100 cc. 15 months after treatment is discontinued, it is very probable that activity of the syphilitic process has been permanently checked, according to Dattner and Thomas. They have rarely observed relapses more than one year after therapy, never after 15 months. Concurrently, in favorable cases, the complement-fixation and colloidal reactions must show a steady trend towards normal. Complete reversal to normal may require four years or more in late cases.

The Dattner-Thomas concept of active and inactive neurosyphilis, based principally on the cell count and protein level in the spinal fluid, is the conclusion from extremely careful observations carried on by Dattner in Wagner Jauregg's clinic, in Vienna, and, since 1939, by Dattner and Thomas at the Bellevue Hospital, New York. Neurologists and syphilologists do not all agree with this concept. There are exceptions to its basic features; nevertheless, they furnish a practical criterion for differentiating an active syphilitic process from an inactive one by the spinal-fluid examination. This knowledge is essential for application of adequate therapy. 14 references.

book reviews

Peptic Ulcer. A. C. IVY, M. I. GROSSMAN, AND WILLIAM H. BACHRACH, Philadelphia, The Blakiston Co., 1950. 1,144 pages, 137 illustrations, 210 tables. \$14.00.

The book by Ivy, Grossman, and Bachrach represents an important publication in the field of clinical and experimental peptic ulcer. The bibliography alone is of extreme value for those interested in these subjects. The separate index of authors includes approximately 5,000 entries. There is, in addition, a subject index and a thorough bibliography at the end of each chapter. Tables, figures, and charts are included and the printing is excellent. The book includes, in this regard, 137 illustrations and 210 tables.

The forward is written in separate sections by Drs. Sarah Jordon, Donald Balfour, and Anton J. Carlson. The first part of the book consists of an introduction to the problems of peptic ulcer; the second part concerns pathogenesis; the third concerns the diagnostic problems; and the fourth, treatment. Everything on the subject from experimental work to the clinical management of patients is included.

This book is an absolute necessity to those who study peptic ulcers in the experimental laboratory or on the wards. It should be of interest to physiologists, internists, and surgeons, and is to be highly recommended.

Scientific Medical and Technical Books (1945-48). R. R. HAWKINS, Washington, D. C.,
National Research Council, 514 Pages, Oct. 1950.

This "Supplement" brings up-to-date the first volume, which listed books published during the 15 years, 1930-44. As in the original volume, Col. Harold W. Jones, Director (ret.) Army Medical Library and Editor of *Blakiston's New Gould Medical Dictionary*, is responsible for the selections in medicine and related fields. The list is intelligently classified and contains full descriptive annotations for each title. It bears witness to Dr. Jones' keen judgment and wide experience.

The book contains some 750 titles of immediate interest to physicians; it may well be considered an indispensable tool to book selection for any type of medical library—private or public. Nor will it disappoint the physician looking "for the best book" in some specialty or for a cross-section of the work done in a certain field.

The Editor-in-Chief, R. R. Hawkins of the New York Public Library, is to be congratulated on this new achievement.

Saints, Sinners and Psychiatry. DR. CAMILLA M. ANDERSON. Philadelphia, J. B. Lippincott Co., 1950. Price \$2.95.

It is a curious twist of psychology that most people cannot be bothered trying to understand even the things that concern them most. We have time and energy for every variety of activity, but little, if any, for getting some understanding of why man behaves as he does. Many think that it is futile to try. Others think that there would be no advantage if they did understand. Some say that men are easy to fathom, but the ways of women are inscrutable. Others believe that they are interested, but their interest wanes promptly if they are not spoon-fed, or if they seem to be required to look beyond a spectacular story of headline proportions to the finer print below. It is only when the story concerns themselves that people can be counted on to become avid readers of the very fine print. Therefore, when a theory of behavior is presented, it will have drawing power sufficient to hold the reader's attention only if he senses that the theory fits—that it is talking about himself. Such theory is presented in this book. It is the author's belief that through use of this theory, behavior in general and one's own in particular can be understood. Further, there is a distinct advantage in having this understanding, and this advantage is a practical one, having no relation to a smug superiority derived from knowing that you know.

Because the concepts presented are somewhat different from those ordinarily advocated by psychiatrists, it has seemed necessary to surround them with sufficient explanatory material and case illustrations to give a background or basis for arriving at the concepts. This may well be regarded by some as the insurmountable fine print. The theory of behavior as it is developed in the succeeding chapters will be found to be so clear, simple, practical and valid that it will find its way into the everyday lives and everyday language of everyday people. Psychiatry will then be removed from the fantastic to the familiar, and preventive medicine in psychiatry will have taken its place alongside other branches of preventive medicine which are helping to make life more satisfactory.

Regional Dermatologic Diagnosis. A Practical System of Dermatology for the Non-Specialist. By ERVIN EPSTEIN, M.D. Philadelphia, Lea & Febiger, 1950.

This illustrated manual gives a working knowledge of diseases of the skin. It circumvents the use of technical terms and confusing descriptions that abound in formal texts of dermatology. The anatomic basis for diagnosis simplifies everyday practice. For instance, only certain dermatoses occur on the elbows, and psoriasis is most common. Under each anatomic region the chapter is subdivided into sections on inflammations, granulomas, tumors, and so on. A brief description of the special disease entity is presented and effective therapy formulated. Symptom diagnosis is the approach, but specific therapy is stressed. The one, of course, depends upon the other and the author does an admirable job of guiding accurate diagnoses by this clinical means. The book is well written, beautifully illustrated and up-to-date.

Year Book of Pediatrics. By HENRY G. PONCHER, M.D., JULIUS B. RICHMOND, M.D., AND ISAAC A. ABT, M.D. Chicago, The Year Book Publishers. Price \$5.00.

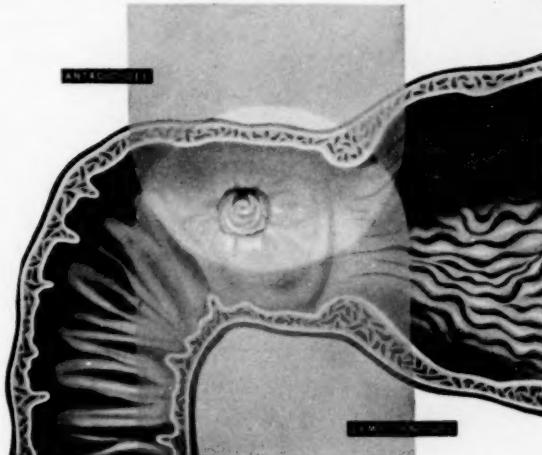
This year's summary of pediatric progress is embodied not only in a classified system of abstracts culled from the world literature but also in a series of editorials in various fields of medical advances. The usual systematization of abstracts from the literature is given tersely with adequate illustrations and editorial comments. There is an excellent chapter on toxicology, a neglected phase of pediatrics. A welcome innovation is the series of editorial summaries on the care of the premature, the development of infant feeding in diarrhea, child urology, respiratory tract, tuberculosis, viral diseases, rheumatic fever, endocrinology, cerebral palsy, and congenital heart disease. Considerable space is devoted to the application of ACTH and cortisone in pediatric practice.

Food Allergy. By HERBERT J. RINKEL, M.D., THERON G. RANDOLPH, M.D., MICHAEL ZELLER, M.D. Springfield, Ill., Charles C. Thomas.

This monograph presents the mechanism and management of food allergy. It is based upon direct clinical observations made in the course of performing thousands of individual food tests and the correlation of these tests observed with the clinical course of various allergic diseases. Emphasis is placed upon the fundamental nature of the disturbance rather than the food in different clinical syndromes. The technic of the individual food tests and the prophylactic use of the rotation and diversified diet is introduced. Unfortunately, food sensitivity is seldom the sole etiologic agent in allergic diseases. A clear-cut understanding of food allergy as given by these authors will help approximate ingestant, inhalant, and contactant factors in allergic and related disorders. The book presents the cyclic concept of food allergy, etiologic basis of ingested allergies, specific symptoms, diagnostic methods, therapeutic procedures and nonallergic recipes. A specific chapter is devoted to the Food, Drug, and Cosmetic Act to elaborate the role of marketed products in the everyday allergic problems of man.

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1. Most, H., and Van Asendelft, F.: Ann. New York Acad. Sc. 53:427 (Sept. 15) 1950.

2. Finland, M.; Gocke, T. M.; Jackson, G. G.; Womack, C. R., and Kass, H.: Ann. New York Acad. Sc. 53:290 (Sept. 15) 1950.

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